

# PBW

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September 21, 2007  
(PBW Project No. 135)

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(6SF-R)

## VIA OVERNIGHT DELIVERY

Mr. M. Gary Miller, Remedial Project Manager  
U.S. Environmental Protection Agency, Region 6  
Superfund Division (6SF-AP)  
1445 Ross Avenue, Suite 1200  
Dallas, Texas 75202-2733

Re: Proposed Lot 19/20 Soil Sample Analytes, Gulfco Marine Maintenance Site, Freeport,  
Texas

Dear Mr. Miller:

Consistent with the requirements of Section 5.6.3 of the approved Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the subject site (the Site), please find enclosed the proposed analyte list for surface soil samples from Lots 19 and 20, located immediately west of the Site. This information is provided by Pastor, Behling & Wheeler, LLC (PBW) on behalf of LDL Coastal Limited LP (LDL), Chromalloy American Corporation (Chromalloy) and The Dow Chemical Company (Dow). In accordance with Paragraph 52 of the modified Unilateral Administrative Order for the Site, I certify that I have been fully authorized by the Respondents to submit these documents and to legally bind all Respondents thereto.

This letter includes the modification requested by the United States Environmental Protection Agency (EPA) in a letter dated September 6, 2007, which approved the proposed Lot 19 and 20 soil sample analyte list provided in the original version of this letter submitted on August 20, 2007.

Section 5.6.3 of the RI/FS Work Plan (the Work Plan) provides for the collection of surface soil samples (0 to 1-inch depth interval) from 27 random locations within a 100-foot sample block grid on off-site Lots 19 and 20. These samples were collected on April 10, 2007 from the locations shown on the attached Figure 1.

In accordance with the Work Plan provisions, the analyte list for the Lots 19 and 20 surface soil samples was developed through a two step process. The first step was a comparison of the maximum concentration of each metal in the surface soil samples from on-site Lots 21, 22 and 23 to the Preliminary Screening Values (PSVs) in Table 17 of the RI/FS workplan. The step second was a comparison of the Lots 21-23 data to site-specific background data.



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## PSV COMPARISON

The PSV comparison is provided in the attached Table 1, which lists the maximum metal concentrations reported in the surface soil samples from Lots 21-23, along with the corresponding Table 17 PSVs for those metals. The Lots 21-23 data (Appendix B to this letter) include metals concentrations from soil boring (SB) locations (0 to 0.5 foot depth interval) and surface sample (SS) locations (0 to 1 inch depth interval). It should be noted that the PSV listed for iron in Table 1 (53,000 mg/kg) represents a revised PSV calculated from an updated National Center for Environmental Assessment (NCEA) iron reference dose of 0.7 mg/kg-day (revised in September of 2006). Use of this revised reference dose and the resulting iron PSV of 53,000 mg/kg was previously approved by you in an e-mail on February 1, 2007. As shown on Table 1, the maximum arsenic, lead and mercury concentrations in the Lots 21-23 samples exceeded their respective Table 17 PSVs.

The far right column in Table 1 lists, for each parameter, the lowest of the Table 17 PSVs associated with direct contact exposure pathways (i.e., those pathways involving soil contact by residential receptors). The PSVs for these pathways include EPA Region 6 human health media-specific screening levels for soil, TCEQ <sup>Tot</sup>Soil<sub>Comb</sub> Protective Concentration Levels (PCLs) (includes inhalation, ingestion and dermal pathways), and TCEQ <sup>Air</sup>Soil<sub>Inh-v</sub> PCLs (inhalation pathway). For all metals except lead, mercury and strontium, the Table 17 PSV is equivalent to the lowest direct contact PSV. For lead and mercury, the Table 17 PSV is the TCEQ <sup>GW</sup>Soil<sub>Class3</sub> PCL, which is based on protection of groundwater. Given the absence of these two metals in groundwater above screening values (see data provided in my January 19, 2007 letter to you), and the objective of the Lots 19-20 investigation to evaluate potential direct contact residential surface soil exposures, it is proposed that the lowest direct contact PSV is the appropriate screening criterion for evaluating these two metals as potential analytes. For mercury, the maximum concentration in the Lots 21-23 samples (0.66 mg/kg) is less than lowest direct contact PSV (2.1 mg/kg), and thus, consistent with my discussion with you on April 9, 2007, mercury was not retained on the Lots 19-20 analyte list. The maximum lead concentration (643 mg/kg) exceeds the lowest direct contact PSV (400 mg/kg), and thus lead was retained on the proposed Lot 19-20 analyte list.

## BACKGROUND COMPARISON

Following the PSV comparison, the Lots 21-23 surface soil data for arsenic and lead were compared to site-specific background data from ten surface soil concentrations collected from within the approved background area approximately 2,000 feet east of the Site near the east end of Marlin Avenue. The background sample locations are shown on Figure 2. The background arsenic and lead data are provided in Appendix C.

The background evaluation was performed using the same approach previously used for Intracoastal Waterway sediment data when developing the fish tissue analyte list. This methodology is described in Chapter 5 of EPA's *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites* (EPA, 2002). Consistent with this methodology, summary statistics were calculated and distribution testing was conducted on the Lots 21-23 surface soil and background soil data sets for arsenic and lead. The results of these calculations, performed using EPA's *PRO UCL* statistical software package (EPA, 2004), are provided in Appendix D.

Mr. M. Gary Miller  
September 21, 2007  
Page 3 of 3

EPA Guidance (EPA, 2002) recommends Student's Two-Sample t-Test, which tests for the difference in means between two populations, for comparisons to background; however, it notes that this test is not recommended when comparing populations with unequal variances. Inspection of the summary statistics in Appendix D shows that the variances for arsenic and lead were not similar for the Lots 21-23 surface soil and background soil data sets. In such cases, EPA 2002 refers the user to EPA's *Guidance for Data Quality Assessment Practical Methods for Data Analysis* (EPA, 2000), which recommends use of Satterthwaite's Two-Sample t-Test when comparing data sets with unequal variances. In accordance with this guidance, Satterthwaite's Two-Sample t-Test was used to determine whether the Lots 21-23 and background data sets were statistically different. Appendix E provides the calculations, described in EPA, 2000, that determine statistical difference using this test. As detailed therein, the Lots 21-23 surface soil data and the background soil data for arsenic were found to be statistically similar, while the Lots 21-23 surface soil data and the background soil data for lead were found to be statistically different.

Thus the comparison of the Lots 21-23 data to the background data indicates that lead is above background, while arsenic is within the range of background. Based on the PSV comparison described above and this background evaluation, it is proposed that the Lots 19 and 20 surface soil samples collected in April be analyzed for lead in accordance with the methods and procedures specified in the Work Plan, the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP).

Thank you for the opportunity to submit this information. Based on your approval of a previous version of this letter submitted on August 20, 2007, we have initiated analysis of the Lot 19 and 20 surface soil samples for lead.

Sincerely,

PASTOR, BEHLING & WHEELER, LLC



Eric F. Pastor, P.E.  
Principal Engineer

cc: Ms. Luda Voskov - Texas Commission on Environmental Quality  
Mr. Robert L. Iuliucci - Sequa Corporation  
Mr. Brent Murray – Environmental Quality, Inc.  
Mr. Rob Rouse - The Dow Chemical Company  
Mr. Donnie Belote – The Dow Chemical Company  
Mr. Allen Daniels - LDL Coastal Limited, LP  
Mr. F. William Mahley - Strasburger & Price, LLP  
Mr. James C. Morris III - Thompson & Knight, LLP  
Ms. Elizabeth Webb - Thompson & Knight, LLP

**TABLE**

**Table 1**  
**Comparison of Maximum Metals Concentrations in Surface Soil Samples**  
**from Lots 21, 22, and 23 to Preliminary Screening Values**

Parameter	Maximum Concentration (mg/kg)	Sample with Maximum Concentration	Table 17 Preliminary Screening Value (PSV) <sup>1</sup>	Lowest Table 17 Direct Contact PSV <sup>2</sup>
Aluminum	15,200 J	SG5SB58-115-(0-0.5)	63,700	63,700
Antimony	3.97 J-	SB4SB24-047-(0-0.5)	15	15
<b>Arsenic</b>	<b>17.6</b>	<b>SD3SB33-065-(0-0.5)</b>	<b>0.39</b>	<b>0.39</b>
Barium	1,650 J	SH7SB68-135 (0-0.5)	2,800	2,800
Beryllium	4.60	SG2SB53-105-(0-0.5)	37.6	37.6
Boron	54.4	SG5SB58-115-(0-0.5)	16,000	16,000
Cadmium	1.41	SD5SB35-069-(0-0.5)	39	39
Chromium	136	SH4SB64-127-(0-0.5)	23,000	23,000
Cobalt	16.0	SG5SB58-115-(0-0.5)	900	900
Copper	216	SB2SB22-043-(0-0.5)	548	548
Iron	44,600	SE4SB40-079-(0-0.5)	53,000 <sup>3</sup>	53,000
<b>Lead</b>	<b>643 J</b>	<b>SH4SB64-127-(0-0.5)</b>	<b>151</b>	<b>400</b>
Lithium	28.0	SD3SB33-065-(0-0.5)	1,260	1,260
Manganese	546 J	SD2SB32-063-(0-0.5)	3,200	3,200
<b>Mercury</b>	<b>0.66</b>	<b>SG5SB58-115-(0-0.5)</b>	<b>0.39</b>	<b>2.10</b>
Molybdenum	8.42	SG5SB58-115-(0-0.5)	156	156
Nickel	22.4	SA5SB19-037-(0-0.5)	832	832
Strontium	527 J	SG5SB58-115-(0-0.5)	30,700	44,100
Thallium	0.91	SG5SB58-115-(0-0.5)	6.3	6.3
Tin	7.08	SC4SS10-010-(0-1)	35,300	35,300
Titanium	645	SG5SB58-115-(0-0.5)	1,000,000	1,000,000
Vanadium	45.6	SG5SB58-115-(0-0.5)	78	78
Zinc	4,770 J	SD5SB35-069-(0-0.5)	9,920	9,920

Notes:

<sup>1</sup>Preliminary Screening Value from Table 17 of RI/FS Work Plan.

<sup>2</sup>Lowest of direct contact screening values list in Table 17 (i.e., lowest of EPA Region 6 Soil Screening Criteria, TCEQ <sup>Tot</sup>Soil<sub>Comb</sub> PCL, and TCEQ <sup>Air</sup>Soil<sub>nh-v</sub> PCL).

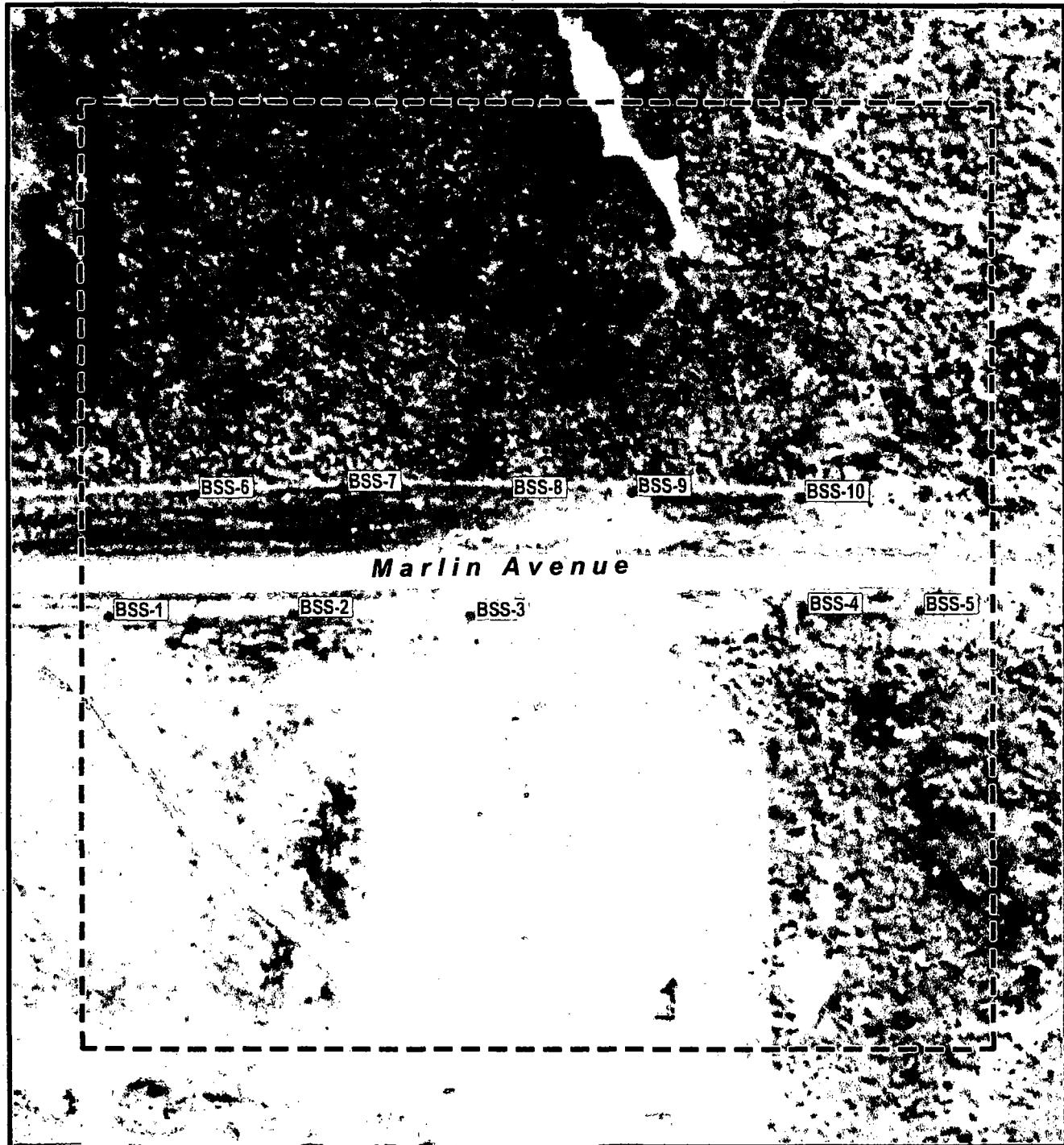
<sup>3</sup>PSV for iron reflects revised reference dose issued by NCEA in September 2006.

<sup>4</sup>Data qualifiers: J = estimated value; J- = estimated value, biased low.

<sup>5</sup>No samples contained detectable concentrations of selenium, or silver.

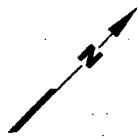
<sup>6</sup>Metals for which the maximum concentration exceeds its Table 17 PSV are shown in bold.

## **FIGURES**



#### EXPLANATION

- — — Background Soil Area Boundary (per Figure 8 of Field Sampling Plan)
- BSS-1e Approximate Background Soil Sample Location



Approx. Scale in Feet  
 0 40 80

Source of photo:  
H-GAC, Texas aerial photograph, 2004.

**GULFCO MARINE MAINTENANCE**  
**FREEPORT, BRAZORIA COUNTY, TEXAS**

**Figure 2**  
**BACKGROUND SOIL SAMPLE LOCATION MAP**

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: AUG., 2007	CHECKED: EFP	

**PASTOR, BEHLING & WHEELER, LLC**  
CONSULTING ENGINEERS AND SCIENTISTS

**APPENDIX A**

**REFERENCES**

## APPENDIX A

### REFERENCES

- United States Environmental Protection Agency (EPA), 2000. *Guidance for Data Quality Assessment Practical Methods for Data Analysis*. EPA QA/G-9. QA00 Update. Office of Environmental Information. Washington, DC. EPA/600/R-96/084. July.
- United States Environmental Protection Agency (EPA), 2002. *Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites*. Office of Emergency and Remedial Response. Washington, DC. EPA 540-R-01-003. OSWER 9285.7-41. September.
- United States Environmental Protection Agency (EPA), 2004a. PRO UCL Version 3.00.02 Statistical software available at <http://www.epa.gov/nerlesd1/> and PRO UCL Version 3 User's Guide. EPA 600/R04/079. EPA Technical Support Center for Monitoring and Site Characterization. April.

**APPENDIX B**  
**LOTS 21-23 SURFACE SOIL DATA**

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SA1SB15-029-(0-0.5)	Aluminum	912	mg/kg		J
SA1SB15-029-(0-0.5)	Antimony	0.2	mg/kg	U	R
SA1SB15-029-(0-0.5)	Arsenic	0.78	mg/kg	B	J
SA1SB15-029-(0-0.5)	Barium	101	mg/kg		J
SA1SB15-029-(0-0.5)	Beryllium	0.063	mg/kg	B	J
SA1SB15-029-(0-0.5)	Boron	2.76	mg/kg	B	J
SA1SB15-029-(0-0.5)	Cadmium	0.052	mg/kg	B	U
SA1SB15-029-(0-0.5)	Chromium	14.7	mg/kg		none
SA1SB15-029-(0-0.5)	Cobalt	1.96	mg/kg		none
SA1SB15-029-(0-0.5)	Copper	105	mg/kg		none
SA1SB15-029-(0-0.5)	Iron	17900	mg/kg		none
SA1SB15-029-(0-0.5)	Lead	208	mg/kg		none
SA1SB15-029-(0-0.5)	Lithium	1.48	mg/kg	B	J
SA1SB15-029-(0-0.5)	Manganese	187	mg/kg		J
SA1SB15-029-(0-0.5)	Mercury	0.0039	mg/kg	B	J
SA1SB15-029-(0-0.5)	Molybdenum	1.25	mg/kg		none
SA1SB15-029-(0-0.5)	Nickel	8.9	mg/kg		none
SA1SB15-029-(0-0.5)	Selenium	0.43	mg/kg	U	none
SA1SB15-029-(0-0.5)	Silver	0.048	mg/kg	U	none
SA1SB15-029-(0-0.5)	Strontium	141	mg/kg		J
SA1SB15-029-(0-0.5)	Thallium	0.079	mg/kg	U	none
SA1SB15-029-(0-0.5)	Tin	0.46	mg/kg	U	none
SA1SB15-029-(0-0.5)	Titanium	26.1	mg/kg		none
SA1SB15-029-(0-0.5)	Vanadium	5.83	mg/kg		none
SA1SB15-029-(0-0.5)	Zinc	877	mg/kg		none
SA1SS01-001-(0-1)	Aluminum	1590	mg/kg		none
SA1SS01-001-(0-1)	Antimony	0.21	mg/kg	U	R
SA1SS01-001-(0-1)	Arsenic	0.18	mg/kg	U	none
SA1SS01-001-(0-1)	Barium	194	mg/kg		none
SA1SS01-001-(0-1)	Beryllium	0.031	mg/kg	B	J
SA1SS01-001-(0-1)	Boron	1.03	mg/kg	U	none
SA1SS01-001-(0-1)	Cadmium	0.86	mg/kg		none
SA1SS01-001-(0-1)	Chromium	12.8	mg/kg		none
SA1SS01-001-(0-1)	Cobalt	3.52	mg/kg		none
SA1SS01-001-(0-1)	Copper	26.1	mg/kg		none
SA1SS01-001-(0-1)	Iron	31900	mg/kg		J
SA1SS01-001-(0-1)	Lead	91.3	mg/kg		none
SA1SS01-001-(0-1)	Lithium	2.5	mg/kg		none
SA1SS01-001-(0-1)	Manganese	283	mg/kg		J
SA1SS01-001-(0-1)	Mercury	0.0022	mg/kg	U	none
SA1SS01-001-(0-1)	Molybdenum	1.29	mg/kg	B	J
SA1SS01-001-(0-1)	Nickel	10.3	mg/kg		none
SA1SS01-001-(0-1)	Selenium	0.46	mg/kg	U	none
SA1SS01-001-(0-1)	Silver	0.051	mg/kg	U	none
SA1SS01-001-(0-1)	Strontium	63.8	mg/kg		none
SA1SS01-001-(0-1)	Thallium	0.084	mg/kg	U	none
SA1SS01-001-(0-1)	Tin	1.09	mg/kg	B	J
SA1SS01-001-(0-1)	Titanium	21.7	mg/kg		none
SA1SS01-001-(0-1)	Vanadium	10.1	mg/kg		none
SA1SS01-001-(0-1)	Zinc	300	mg/kg		none
SA2SB16-031-(0-0.5)	Aluminum	414	mg/kg		J
SA2SB16-031-(0-0.5)	Antimony	0.2	mg/kg	U	R

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SA2SB16-031-(0-0.5)	Arsenic	2.64	mg/kg		none
SA2SB16-031-(0-0.5)	Barium	78.9	mg/kg		J
SA2SB16-031-(0-0.5)	Beryllium	0.036	mg/kg	B	J
SA2SB16-031-(0-0.5)	Boron	2.49	mg/kg	B	J
SA2SB16-031-(0-0.5)	Cadmium	0.017	mg/kg	U	none
SA2SB16-031-(0-0.5)	Chromium	40.6	mg/kg		none
SA2SB16-031-(0-0.5)	Cobalt	1.67	mg/kg		none
SA2SB16-031-(0-0.5)	Copper	15.9	mg/kg		none
SA2SB16-031-(0-0.5)	Iron	15300	mg/kg		none
SA2SB16-031-(0-0.5)	Lead	45.8	mg/kg		none
SA2SB16-031-(0-0.5)	Lithium	0.65	mg/kg	B	J
SA2SB16-031-(0-0.5)	Manganese	163	mg/kg		J
SA2SB16-031-(0-0.5)	Mercury	0.002	mg/kg	U	none
SA2SB16-031-(0-0.5)	Molybdenum	1.02	mg/kg	B	J
SA2SB16-031-(0-0.5)	Nickel	7.18	mg/kg		none
SA2SB16-031-(0-0.5)	Selenium	0.43	mg/kg	U	none
SA2SB16-031-(0-0.5)	Silver	0.048	mg/kg	U	none
SA2SB16-031-(0-0.5)	Strontium	99.9	mg/kg		J
SA2SB16-031-(0-0.5)	Thallium	0.079	mg/kg	U	none
SA2SB16-031-(0-0.5)	Tin	0.46	mg/kg	U	none
SA2SB16-031-(0-0.5)	Titanium	18.6	mg/kg		none
SA2SB16-031-(0-0.5)	Vanadium	5.42	mg/kg		none
SA2SS02-002-(0-1)	Zinc	235	mg/kg		none
SA2SS02-002-(0-1)	Aluminum	1900	mg/kg		none
SA2SS02-002-(0-1)	Antimony	0.26	mg/kg	U	R
SA2SS02-002-(0-1)	Arsenic	0.22	mg/kg	U	none
SA2SS02-002-(0-1)	Barium	150	mg/kg		none
SA2SS02-002-(0-1)	Beryllium	0.1	mg/kg	B	J
SA2SS02-002-(0-1)	Boron	1.28	mg/kg	U	none
SA2SS02-002-(0-1)	Cadmium	0.66	mg/kg		none
SA2SS02-002-(0-1)	Chromium	27.5	mg/kg		none
SA2SS02-002-(0-1)	Cobalt	3.06	mg/kg		none
SA2SS02-002-(0-1)	Copper	60.1	mg/kg		none
SA2SS02-002-(0-1)	Iron	21500	mg/kg		J
SA2SS02-002-(0-1)	Lead	393	mg/kg		none
SA2SS02-002-(0-1)	Lithium	3.17	mg/kg		none
SA2SS02-002-(0-1)	Manganese	219	mg/kg		J
SA2SS02-002-(0-1)	Mercury	0.013	mg/kg	B	J
SA2SS02-002-(0-1)	Molybdenum	2.08	mg/kg		none
SA2SS02-002-(0-1)	Nickel	10.4	mg/kg		none
SA2SS02-002-(0-1)	Selenium	0.58	mg/kg	U	none
SA2SS02-002-(0-1)	Silver	0.064	mg/kg	U	none
SA2SS02-002-(0-1)	Strontium	35.2	mg/kg		none
SA2SS02-002-(0-1)	Thallium	0.11	mg/kg	U	none
SA2SS02-002-(0-1)	Tin	1.12	mg/kg	B	J
SA2SS02-002-(0-1)	Titanium	21.6	mg/kg		none
SA2SS02-002-(0-1)	Vanadium	11.3	mg/kg		none
SA2SS02-002-(0-1)	Zinc	572	mg/kg		none
SA3SB17-033-(0-0.5)	Aluminum	3120	mg/kg		J
SA3SB17-033-(0-0.5)	Antimony	0.2	mg/kg	U	R
SA3SB17-033-(0-0.5)	Arsenic	4.66	mg/kg		none
SA3SB17-033-(0-0.5)	Barium	203	mg/kg		J

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SA3SB17-033-(0-0.5)	Beryllium	0.17	mg/kg	B	J
SA3SB17-033-(0-0.5)	Boron	9.39	mg/kg		none
SA3SB17-033-(0-0.5)	Cadmium	0.017	mg/kg	U	none
SA3SB17-033-(0-0.5)	Chromium	14.1	mg/kg		none
SA3SB17-033-(0-0.5)	Cobalt	3.58	mg/kg		none
SA3SB17-033-(0-0.5)	Copper	207	mg/kg		none
SA3SB17-033-(0-0.5)	Iron	29300	mg/kg		none
SA3SB17-033-(0-0.5)	Lead	8.43	mg/kg		none
SA3SB17-033-(0-0.5)	Lithium	5.06	mg/kg		none
SA3SB17-033-(0-0.5)	Manganese	286	mg/kg		J
SA3SB17-033-(0-0.5)	Mercury	0.0021	mg/kg	U	none
SA3SB17-033-(0-0.5)	Molybdenum	2.24	mg/kg		none
SA3SB17-033-(0-0.5)	Nickel	14.9	mg/kg		none
SA3SB17-033-(0-0.5)	Selenium	0.44	mg/kg	U	none
SA3SB17-033-(0-0.5)	Silver	0.049	mg/kg	U	none
SA3SB17-033-(0-0.5)	Strontium	147	mg/kg		J
SA3SB17-033-(0-0.5)	Thallium	0.08	mg/kg	U	none
SA3SB17-033-(0-0.5)	Tin	0.82	mg/kg	B	J
SA3SB17-033-(0-0.5)	Titanium	85.9	mg/kg		none
SA3SB17-033-(0-0.5)	Vanadium	8.97	mg/kg		none
SA3SB17-033-(0-0.5)	Zinc	412	mg/kg		none
SA3SS03-003-(0-1)	Aluminum	7480	mg/kg		none
SA3SS03-003-(0-1)	Antimony	0.23	mg/kg	U	R
SA3SS03-003-(0-1)	Arsenic	0.19	mg/kg	U	none
SA3SS03-003-(0-1)	Barium	190	mg/kg		none
SA3SS03-003-(0-1)	Beryllium	0.55	mg/kg		none
SA3SS03-003-(0-1)	Boron	1.12	mg/kg	U	none
SA3SS03-003-(0-1)	Cadmium	0.4	mg/kg		none
SA3SS03-003-(0-1)	Chromium	14.4	mg/kg		none
SA3SS03-003-(0-1)	Cobalt	5.45	mg/kg		none
SA3SS03-003-(0-1)	Copper	28.1	mg/kg		none
SA3SS03-003-(0-1)	Iron	17100	mg/kg		J
SA3SS03-003-(0-1)	Lead	54.8	mg/kg		none
SA3SS03-003-(0-1)	Lithium	12.6	mg/kg		none
SA3SS03-003-(0-1)	Manganese	360	mg/kg		J
SA3SS03-003-(0-1)	Mercury	0.0031	mg/kg	B	J
SA3SS03-003-(0-1)	Molybdenum	0.44	mg/kg	B	J
SA3SS03-003-(0-1)	Nickel	16	mg/kg		none
SA3SS03-003-(0-1)	Selenium	0.5	mg/kg	U	none
SA3SS03-003-(0-1)	Silver	0.056	mg/kg	U	none
SA3SS03-003-(0-1)	Strontium	82.4	mg/kg		none
SA3SS03-003-(0-1)	Thallium	0.092	mg/kg	U	none
SA3SS03-003-(0-1)	Tin	0.53	mg/kg	U	none
SA3SS03-003-(0-1)	Titanium	25.1	mg/kg		none
SA3SS03-003-(0-1)	Vanadium	17.9	mg/kg		none
SA3SS03-003-(0-1)	Zinc	268	mg/kg		none
SA4SB18-035-(0-0.5)	Aluminum	3770	mg/kg		none
SA4SB18-035-(0-0.5)	Antimony	0.21	mg/kg	U	R
SA4SB18-035-(0-0.5)	Arsenic	4.18	mg/kg		none
SA4SB18-035-(0-0.5)	Barium	540	mg/kg		J
SA4SB18-035-(0-0.5)	Beryllium	0.22	mg/kg		none
SA4SB18-035-(0-0.5)	Boron	5.67	mg/kg		J-

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SA4SB18-035-(0-0.5)	Cadmium	0.018	mg/kg	U	none
SA4SB18-035-(0-0.5)	Chromium	14.9	mg/kg		J
SA4SB18-035-(0-0.5)	Cobalt	3.6	mg/kg		none
SA4SB18-035-(0-0.5)	Copper	47.5	mg/kg		J
SA4SB18-035-(0-0.5)	Iron	17300	mg/kg		none
SA4SB18-035-(0-0.5)	Lead	146	mg/kg		J
SA4SB18-035-(0-0.5)	Lithium	6.75	mg/kg		none
SA4SB18-035-(0-0.5)	Manganese	237	mg/kg		J
SA4SB18-035-(0-0.5)	Mercury	0.048	mg/kg		U
SA4SB18-035-(0-0.5)	Molybdenum	1.17	mg/kg	B	J
SA4SB18-035-(0-0.5)	Nickel	11	mg/kg		none
SA4SB18-035-(0-0.5)	Selenium	0.46	mg/kg	U	none
SA4SB18-035-(0-0.5)	Silver	0.052	mg/kg	U	none
SA4SB18-035-(0-0.5)	Strontium	132	mg/kg		J
SA4SB18-035-(0-0.5)	Thallium	0.084	mg/kg	U	none
SA4SB18-035-(0-0.5)	Tin	2.16	mg/kg	B	J
SA4SB18-035-(0-0.5)	Titanium	21.6	mg/kg		none
SA4SB18-035-(0-0.5)	Vanadium	10.4	mg/kg		none
SA4SB18-035-(0-0.5)	Zinc	414	mg/kg		none
SA4SS04-004-(0-1)	Aluminum	1180	mg/kg		none
SA4SS04-004-(0-1)	Antimony	0.21	mg/kg	U	R
SA4SS04-004-(0-1)	Arsenic	1.34	mg/kg	B	J
SA4SS04-004-(0-1)	Barium	124	mg/kg		none
SA4SS04-004-(0-1)	Beryllium	0.018	mg/kg	B	J
SA4SS04-004-(0-1)	Boron	1.02	mg/kg	U	none
SA4SS04-004-(0-1)	Cadmium	0.71	mg/kg		none
SA4SS04-004-(0-1)	Chromium	24.8	mg/kg		none
SA4SS04-004-(0-1)	Cobalt	3.01	mg/kg		none
SA4SS04-004-(0-1)	Copper	30.1	mg/kg		none
SA4SS04-004-(0-1)	Iron	26900	mg/kg		J
SA4SS04-004-(0-1)	Lead	184	mg/kg		none
SA4SS04-004-(0-1)	Lithium	1.73	mg/kg	B	J
SA4SS04-004-(0-1)	Manganese	268	mg/kg		J
SA4SS04-004-(0-1)	Mercury	0.0021	mg/kg	U	none
SA4SS04-004-(0-1)	Molybdenum	2.18	mg/kg		none
SA4SS04-004-(0-1)	Nickel	11	mg/kg		none
SA4SS04-004-(0-1)	Selenium	0.46	mg/kg	U	none
SA4SS04-004-(0-1)	Silver	0.051	mg/kg	U	none
SA4SS04-004-(0-1)	Strontium	67.8	mg/kg		none
SA4SS04-004-(0-1)	Thallium	0.084	mg/kg	U	none
SA4SS04-004-(0-1)	Tin	1.45	mg/kg	B	J
SA4SS04-004-(0-1)	Titanium	15.1	mg/kg		none
SA4SS04-004-(0-1)	Vanadium	9.51	mg/kg		none
SA4SS04-004-(0-1)	Zinc	509	mg/kg		none
SA5SB19-037-(0-0.5)	Aluminum	3440	mg/kg		none
SA5SB19-037-(0-0.5)	Antimony	0.2	mg/kg	U	R
SA5SB19-037-(0-0.5)	Arsenic	11.5	mg/kg		none
SA5SB19-037-(0-0.5)	Barium	296	mg/kg		J
SA5SB19-037-(0-0.5)	Beryllium	0.19	mg/kg	B	J
SA5SB19-037-(0-0.5)	Boron	4.72	mg/kg		J-
SA5SB19-037-(0-0.5)	Cadmium	0.017	mg/kg	U	none
SA5SB19-037-(0-0.5)	Chromium	27.2	mg/kg		J

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SA5SB19-037-(0-0.5)	Cobalt	5.49	mg/kg		none
SA5SB19-037-(0-0.5)	Copper	45.3	mg/kg		J
SA5SB19-037-(0-0.5)	Iron	30300	mg/kg		none
SA5SB19-037-(0-0.5)	Lead	152	mg/kg		J
SA5SB19-037-(0-0.5)	Lithium	6.51	mg/kg		none
SA5SB19-037-(0-0.5)	Manganese	369	mg/kg		J
SA5SB19-037-(0-0.5)	Mercury	0.025	mg/kg		U
SA5SB19-037-(0-0.5)	Molybdenum	2.69	mg/kg		J-
SA5SB19-037-(0-0.5)	Nickel	22.4	mg/kg		none
SA5SB19-037-(0-0.5)	Selenium	0.45	mg/kg	U	none
SA5SB19-037-(0-0.5)	Silver	0.05	mg/kg	U	none
SA5SB19-037-(0-0.5)	Strontium	79.5	mg/kg		J
SA5SB19-037-(0-0.5)	Thallium	0.082	mg/kg	U	none
SA5SB19-037-(0-0.5)	Tin	1.71	mg/kg	B	J
SA5SB19-037-(0-0.5)	Titanium	16.1	mg/kg		none
SA5SB19-037-(0-0.5)	Vanadium	10.3	mg/kg		none
SA5SB19-037-(0-0.5)	Zinc	412	mg/kg		none
SA5SS05-005-(0-1)	Aluminum	4940	mg/kg		none
SA5SS05-005-(0-1)	Antimony	0.29	mg/kg	U	R
SA5SS05-005-(0-1)	Arsenic	0.25	mg/kg	B	U
SA5SS05-005-(0-1)	Barium	363	mg/kg		none
SA5SS05-005-(0-1)	Beryllium	0.39	mg/kg		none
SA5SS05-005-(0-1)	Boron	1.4	mg/kg	U	none
SA5SS05-005-(0-1)	Cadmium	0.41	mg/kg		none
SA5SS05-005-(0-1)	Chromium	9.9	mg/kg		none
SA5SS05-005-(0-1)	Cobalt	3.75	mg/kg		none
SA5SS05-005-(0-1)	Copper	28.2	mg/kg		none
SA5SS05-005-(0-1)	Iron	18500	mg/kg		J
SA5SS05-005-(0-1)	Lead	55	mg/kg		none
SA5SS05-005-(0-1)	Lithium	7.98	mg/kg		none
SA5SS05-005-(0-1)	Manganese	317	mg/kg		J
SA5SS05-005-(0-1)	Mercury	0.028	mg/kg		none
SA5SS05-005-(0-1)	Molybdenum	0.57	mg/kg	B	J
SA5SS05-005-(0-1)	Nickel	11.1	mg/kg		none
SA5SS05-005-(0-1)	Selenium	0.63	mg/kg	U	none
SA5SS05-005-(0-1)	Silver	0.07	mg/kg	U	none
SA5SS05-005-(0-1)	Strontium	132	mg/kg		none
SA5SS05-005-(0-1)	Thallium	0.11	mg/kg	U	none
SA5SS05-005-(0-1)	Tin	0.67	mg/kg	U	none
SA5SS05-005-(0-1)	Titanium	26.8	mg/kg		none
SA5SS05-005-(0-1)	Vanadium	16.6	mg/kg		none
SA5SS05-005-(0-1)	Zinc	324	mg/kg		none
SA6SB20-039-(0-0.5)	Aluminum	13300	mg/kg		J
SA6SB20-039-(0-0.5)	Antimony	0.23	mg/kg	U	R
SA6SB20-039-(0-0.5)	Arsenic	3.72	mg/kg		none
SA6SB20-039-(0-0.5)	Barium	143	mg/kg		J
SA6SB20-039-(0-0.5)	Beryllium	0.88	mg/kg		none
SA6SB20-039-(0-0.5)	Boron	11.2	mg/kg		none
SA6SB20-039-(0-0.5)	Cadmium	0.02	mg/kg	U	none
SA6SB20-039-(0-0.5)	Chromium	14.5	mg/kg		none
SA6SB20-039-(0-0.5)	Cobalt	7.88	mg/kg		none
SA6SB20-039-(0-0.5)	Copper	12.1	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SA6SB20-039-(0-0.5)	Iron	15000	mg/kg		none
SA6SB20-039-(0-0.5)	Lead	13.4	mg/kg		none
SA6SB20-039-(0-0.5)	Lithium	22.6	mg/kg		none
SA6SB20-039-(0-0.5)	Manganese	259	mg/kg		J
SA6SB20-039-(0-0.5)	Mercury	0.0084	mg/kg	B	J
SA6SB20-039-(0-0.5)	Molybdenum	0.12	mg/kg	B	J
SA6SB20-039-(0-0.5)	Nickel	17.7	mg/kg		none
SA6SB20-039-(0-0.5)	Selenium	0.51	mg/kg	U	none
SA6SB20-039-(0-0.5)	Silver	0.057	mg/kg	U	none
SA6SB20-039-(0-0.5)	Strontium	67.6	mg/kg		J
SA6SB20-039-(0-0.5)	Thallium	0.093	mg/kg	U	none
SA6SB20-039-(0-0.5)	Tin	0.54	mg/kg	U	none
SA6SB20-039-(0-0.5)	Titanium	21	mg/kg		none
SA6SB20-039-(0-0.5)	Vanadium	17.5	mg/kg		none
SA6SB20-039-(0-0.5)	Zinc	103	mg/kg		none
SA6SS06-006-(0-1)	Aluminum	8500	mg/kg		none
SA6SS06-006-(0-1)	Antimony	0.22	mg/kg	U	R
SA6SS06-006-(0-1)	Arsenic	0.18	mg/kg	U	none
SA6SS06-006-(0-1)	Barium	116	mg/kg		none
SA6SS06-006-(0-1)	Beryllium	0.65	mg/kg		none
SA6SS06-006-(0-1)	Boron	1.05	mg/kg	U	none
SA6SS06-006-(0-1)	Cadmium	0.25	mg/kg		none
SA6SS06-006-(0-1)	Chromium	8.71	mg/kg		none
SA6SS06-006-(0-1)	Cobalt	5.65	mg/kg		none
SA6SS06-006-(0-1)	Copper	12.1	mg/kg		none
SA6SS06-006-(0-1)	Iron	13500	mg/kg		J
SA6SS06-006-(0-1)	Lead	17.7	mg/kg		none
SA6SS06-006-(0-1)	Lithium	13.8	mg/kg		none
SA6SS06-006-(0-1)	Manganese	297	mg/kg		J
SA6SS06-006-(0-1)	Mercury	0.0033	mg/kg	B	J
SA6SS06-006-(0-1)	Molybdenum	0.07	mg/kg	U	none
SA6SS06-006-(0-1)	Nickel	13.4	mg/kg		none
SA6SS06-006-(0-1)	Selenium	0.47	mg/kg	U	none
SA6SS06-006-(0-1)	Silver	0.053	mg/kg	U	none
SA6SS06-006-(0-1)	Strontium	103	mg/kg		none
SA6SS06-006-(0-1)	Thallium	0.086	mg/kg	U	none
SA6SS06-006-(0-1)	Tin	0.5	mg/kg	U	none
SA6SS06-006-(0-1)	Titanium	23.7	mg/kg		none
SA6SS06-006-(0-1)	Vanadium	19	mg/kg		none
SA6SS06-006-(0-1)	Zinc	115	mg/kg		none
SA7SS07-007-(0-1)	Aluminum	2390	mg/kg		none
SA7SS07-007-(0-1)	Antimony	0.21	mg/kg	U	R
SA7SS07-007-(0-1)	Arsenic	0.18	mg/kg	U	none
SA7SS07-007-(0-1)	Barium	426	mg/kg		none
SA7SS07-007-(0-1)	Beryllium	0.11	mg/kg	B	J
SA7SS07-007-(0-1)	Boron	1.03	mg/kg	U	none
SA7SS07-007-(0-1)	Cadmium	0.98	mg/kg		none
SA7SS07-007-(0-1)	Chromium	24.2	mg/kg		none
SA7SS07-007-(0-1)	Cobalt	2.82	mg/kg		none
SA7SS07-007-(0-1)	Copper	46.7	mg/kg		none
SA7SS07-007-(0-1)	Iron	27800	mg/kg		J
SA7SS07-007-(0-1)	Lead	144	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SA7SS07-007-(0-1)	Lithium	3.59	mg/kg		none
SA7SS07-007-(0-1)	Manganese	323	mg/kg		J
SA7SS07-007-(0-1)	Mercury	0.024	mg/kg		none
SA7SS07-007-(0-1)	Molybdenum	1.91	mg/kg		none
SA7SS07-007-(0-1)	Nickel	11	mg/kg		none
SA7SS07-007-(0-1)	Selenium	0.46	mg/kg	U	none
SA7SS07-007-(0-1)	Silver	0.052	mg/kg	U	none
SA7SS07-007-(0-1)	Strontium	124	mg/kg		none
SA7SS07-007-(0-1)	Thallium	0.084	mg/kg	U	none
SA7SS07-007-(0-1)	Tin	1.04	mg/kg	B	J
SA7SS07-007-(0-1)	Titanium	26.8	mg/kg		none
SA7SS07-007-(0-1)	Vanadium	14.4	mg/kg		none
SA7SS07-007-(0-1)	Zinc	990	mg/kg		none
SB1SB21-041-(0-0.5)	Aluminum	2740	mg/kg		J
SB1SB21-041-(0-0.5)	Antimony	0.23	mg/kg	U	R
SB1SB21-041-(0-0.5)	Arsenic	7.59	mg/kg		none
SB1SB21-041-(0-0.5)	Barium	183	mg/kg		J
SB1SB21-041-(0-0.5)	Beryllium	0.19	mg/kg	B	J
SB1SB21-041-(0-0.5)	Boron	5.27	mg/kg		none
SB1SB21-041-(0-0.5)	Cadmium	0.23	mg/kg	B	J
SB1SB21-041-(0-0.5)	Chromium	29.6	mg/kg		none
SB1SB21-041-(0-0.5)	Cobalt	4.14	mg/kg		none
SB1SB21-041-(0-0.5)	Copper	101	mg/kg		none
SB1SB21-041-(0-0.5)	Iron	24700	mg/kg		none
SB1SB21-041-(0-0.5)	Lead	524	mg/kg		none
SB1SB21-041-(0-0.5)	Lithium	5.08	mg/kg		none
SB1SB21-041-(0-0.5)	Manganese	273	mg/kg		J
SB1SB21-041-(0-0.5)	Mercury	0.18	mg/kg		none
SB1SB21-041-(0-0.5)	Molybdenum	2.48	mg/kg		none
SB1SB21-041-(0-0.5)	Nickel	14.1	mg/kg		none
SB1SB21-041-(0-0.5)	Selenium	0.5	mg/kg	U	none
SB1SB21-041-(0-0.5)	Silver	0.055	mg/kg	U	none
SB1SB21-041-(0-0.5)	Strontium	27.8	mg/kg		J
SB1SB21-041-(0-0.5)	Thallium	0.091	mg/kg	U	none
SB1SB21-041-(0-0.5)	Tin	2.4	mg/kg	B	J
SB1SB21-041-(0-0.5)	Titanium	22.7	mg/kg		none
SB1SB21-041-(0-0.5)	Vanadium	10.6	mg/kg		none
SB1SB21-041-(0-0.5)	Zinc	1370	mg/kg		none
SB2SB22-043-(0-0.5)	Aluminum	1290	mg/kg		J
SB2SB22-043-(0-0.5)	Antimony	0.19	mg/kg	U	UJ
SB2SB22-043-(0-0.5)	Arsenic	5.78	mg/kg		none
SB2SB22-043-(0-0.5)	Barium	119	mg/kg		none
SB2SB22-043-(0-0.5)	Beryllium	0.089	mg/kg	B	J
SB2SB22-043-(0-0.5)	Boron	4.4	mg/kg		none
SB2SB22-043-(0-0.5)	Cadmium	0.33	mg/kg		none
SB2SB22-043-(0-0.5)	Chromium	29.6	mg/kg		none
SB2SB22-043-(0-0.5)	Cobalt	3.21	mg/kg		none
SB2SB22-043-(0-0.5)	Copper	216	mg/kg		none
SB2SB22-043-(0-0.5)	Iron	21000	mg/kg		J
SB2SB22-043-(0-0.5)	Lead	566	mg/kg		J
SB2SB22-043-(0-0.5)	Lithium	1.88	mg/kg	B	J
SB2SB22-043-(0-0.5)	Manganese	198	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SB2SB22-043-(0-0.5)	Mercury	0.075	mg/kg		none
SB2SB22-043-(0-0.5)	Molybdenum	2.15	mg/kg		none
SB2SB22-043-(0-0.5)	Nickel	11.6	mg/kg		none
SB2SB22-043-(0-0.5)	Selenium	0.42	mg/kg	U	none
SB2SB22-043-(0-0.5)	Silver	0.047	mg/kg	U	none
SB2SB22-043-(0-0.5)	Strontium	23.1	mg/kg		J
SB2SB22-043-(0-0.5)	Thallium	0.077	mg/kg	U	none
SB2SB22-043-(0-0.5)	Tin	1.41	mg/kg	B	J
SB2SB22-043-(0-0.5)	Titanium	33.5	mg/kg		none
SB2SB22-043-(0-0.5)	Vanadium	6.31	mg/kg		none
SB2SB22-043-(0-0.5)	Zinc	978	mg/kg		J
SB3SB23-045-(0-0.5)	Aluminum	8960	mg/kg		none
SB3SB23-045-(0-0.5)	Antimony	0.24	mg/kg	U	R
SB3SB23-045-(0-0.5)	Arsenic	3.97	mg/kg		none
SB3SB23-045-(0-0.5)	Barium	142	mg/kg		J
SB3SB23-045-(0-0.5)	Beryllium	0.56	mg/kg		none
SB3SB23-045-(0-0.5)	Boron	8.98	mg/kg		J-
SB3SB23-045-(0-0.5)	Cadmium	0.02	mg/kg	U	none
SB3SB23-045-(0-0.5)	Chromium	15	mg/kg		J
SB3SB23-045-(0-0.5)	Cobalt	5.88	mg/kg		none
SB3SB23-045-(0-0.5)	Copper	79.5	mg/kg		J
SB3SB23-045-(0-0.5)	Iron	14800	mg/kg		none
SB3SB23-045-(0-0.5)	Lead	40.8	mg/kg		J
SB3SB23-045-(0-0.5)	Lithium	17.6	mg/kg		none
SB3SB23-045-(0-0.5)	Manganese	334	mg/kg		J
SB3SB23-045-(0-0.5)	Mercury	0.089	mg/kg		none
SB3SB23-045-(0-0.5)	Molybdenum	0.4	mg/kg	B	J
SB3SB23-045-(0-0.5)	Nickel	16.1	mg/kg		none
SB3SB23-045-(0-0.5)	Selenium	0.53	mg/kg	U	none
SB3SB23-045-(0-0.5)	Silver	0.059	mg/kg	U	none
SB3SB23-045-(0-0.5)	Strontium	112	mg/kg		J
SB3SB23-045-(0-0.5)	Thallium	0.096	mg/kg	U	none
SB3SB23-045-(0-0.5)	Tin	1.87	mg/kg	B	J
SB3SB23-045-(0-0.5)	Titanium	26.2	mg/kg		none
SB3SB23-045-(0-0.5)	Vanadium	15.9	mg/kg		none
SB3SB23-045-(0-0.5)	Zinc	227	mg/kg		none
SB3SS08-008-(0-1)	Aluminum	986	mg/kg		none
SB3SS08-008-(0-1)	Antimony	0.23	mg/kg	U	R
SB3SS08-008-(0-1)	Arsenic	0.19	mg/kg	U	none
SB3SS08-008-(0-1)	Barium	141	mg/kg		none
SB3SS08-008-(0-1)	Beryllium	0.051	mg/kg	B	J
SB3SS08-008-(0-1)	Boron	1.11	mg/kg	U	none
SB3SS08-008-(0-1)	Cadmium	0.85	mg/kg		none
SB3SS08-008-(0-1)	Chromium	11.3	mg/kg		none
SB3SS08-008-(0-1)	Cobalt	1.7	mg/kg		none
SB3SS08-008-(0-1)	Copper	31.2	mg/kg		none
SB3SS08-008-(0-1)	Iron	17800	mg/kg		J
SB3SS08-008-(0-1)	Lead	387	mg/kg		none
SB3SS08-008-(0-1)	Lithium	1.45	mg/kg	B	J
SB3SS08-008-(0-1)	Manganese	141	mg/kg		J
SB3SS08-008-(0-1)	Mercury	0.0023	mg/kg	U	none
SB3SS08-008-(0-1)	Molybdenum	1.67	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SB3SS08-008-(0-1)	Nickel	6.52	mg/kg		none
SB3SS08-008-(0-1)	Selenium	0.5	mg/kg	U	none
SB3SS08-008-(0-1)	Silver	0.055	mg/kg	U	none
SB3SS08-008-(0-1)	Strontium	27.9	mg/kg		none
SB3SS08-008-(0-1)	Thallium	0.091	mg/kg	U	none
SB3SS08-008-(0-1)	Tin	0.64	mg/kg	B	J
SB3SS08-008-(0-1)	Titanium	38	mg/kg		none
SB3SS08-008-(0-1)	Vanadium	6.48	mg/kg		none
SB3SS08-008-(0-1)	Zinc	788	mg/kg		none
SB4SB24-047-(0-0.5)	Aluminum	720	mg/kg		J
SB4SB24-047-(0-0.5)	Antimony	3.97	mg/kg		J-
SB4SB24-047-(0-0.5)	Arsenic	1.94	mg/kg		none
SB4SB24-047-(0-0.5)	Barium	127	mg/kg		none
SB4SB24-047-(0-0.5)	Beryllium	0.014	mg/kg	B	J
SB4SB24-047-(0-0.5)	Boron	0.95	mg/kg	U	UJ
SB4SB24-047-(0-0.5)	Cadmium	0.86	mg/kg		none
SB4SB24-047-(0-0.5)	Chromium	21	mg/kg		none
SB4SB24-047-(0-0.5)	Cobalt	1.87	mg/kg		none
SB4SB24-047-(0-0.5)	Copper	16.2	mg/kg		none
SB4SB24-047-(0-0.5)	Iron	25300	mg/kg		none
SB4SB24-047-(0-0.5)	Lead	95.5	mg/kg		J
SB4SB24-047-(0-0.5)	Lithium	0.74	mg/kg	B	J
SB4SB24-047-(0-0.5)	Manganese	228	mg/kg		none
SB4SB24-047-(0-0.5)	Mercury	0.0062	mg/kg	B	U
SB4SB24-047-(0-0.5)	Molybdenum	1.47	mg/kg		J-
SB4SB24-047-(0-0.5)	Nickel	11.5	mg/kg		none
SB4SB24-047-(0-0.5)	Selenium	0.43	mg/kg	U	none
SB4SB24-047-(0-0.5)	Silver	0.047	mg/kg	U	none
SB4SB24-047-(0-0.5)	Strontium	16.5	mg/kg		J
SB4SB24-047-(0-0.5)	Thallium	0.078	mg/kg	U	none
SB4SB24-047-(0-0.5)	Tin	0.6	mg/kg	B	J
SB4SB24-047-(0-0.5)	Titanium	13.4	mg/kg		none
SB4SB24-047-(0-0.5)	Vanadium	7.28	mg/kg		none
SB4SB24-047-(0-0.5)	Zinc	491	mg/kg		J
SC1SB25-049-(0-0.5)	Aluminum	9750	mg/kg		none
SC1SB25-049-(0-0.5)	Antimony	0.23	mg/kg	U	R
SC1SB25-049-(0-0.5)	Arsenic	4.2	mg/kg		none
SC1SB25-049-(0-0.5)	Barium	138	mg/kg		J
SC1SB25-049-(0-0.5)	Beryllium	0.73	mg/kg		none
SC1SB25-049-(0-0.5)	Boron	9.15	mg/kg		J-
SC1SB25-049-(0-0.5)	Cadmium	0.02	mg/kg	U	none
SC1SB25-049-(0-0.5)	Chromium	11.1	mg/kg		J
SC1SB25-049-(0-0.5)	Cobalt	6.53	mg/kg		none
SC1SB25-049-(0-0.5)	Copper	12.8	mg/kg		J
SC1SB25-049-(0-0.5)	Iron	11200	mg/kg		none
SC1SB25-049-(0-0.5)	Lead	13.4	mg/kg		J
SC1SB25-049-(0-0.5)	Lithium	17.8	mg/kg		none
SC1SB25-049-(0-0.5)	Manganese	240	mg/kg		J
SC1SB25-049-(0-0.5)	Mercury	0.017	mg/kg		U
SC1SB25-049-(0-0.5)	Molybdenum	0.21	mg/kg	B	J
SC1SB25-049-(0-0.5)	Nickel	14.5	mg/kg		none
SC1SB25-049-(0-0.5)	Selenium	0.51	mg/kg	U	none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SC1SB25-049-(0-0.5)	Silver	0.057	mg/kg	U	none
SC1SB25-049-(0-0.5)	Strontium	50.7	mg/kg		J
SC1SB25-049-(0-0.5)	Thallium	0.094	mg/kg	U	none
SC1SB25-049-(0-0.5)	Tin	0.55	mg/kg	U	none
SC1SB25-049-(0-0.5)	Titanium	16.9	mg/kg		none
SC1SB25-049-(0-0.5)	Vanadium	17.7	mg/kg		none
SC1SB25-049-(0-0.5)	Zinc	52.9	mg/kg		none
SC2SB26-051-(0-0.5)	Aluminum	1710	mg/kg		J
SC2SB26-051-(0-0.5)	Antimony	3.36	mg/kg		J-
SC2SB26-051-(0-0.5)	Arsenic	1.71	mg/kg		none
SC2SB26-051-(0-0.5)	Barium	131	mg/kg		none
SC2SB26-051-(0-0.5)	Beryllium	0.048	mg/kg	B	J
SC2SB26-051-(0-0.5)	Boron	0.96	mg/kg	U	UJ
SC2SB26-051-(0-0.5)	Cadmium	0.81	mg/kg		none
SC2SB26-051-(0-0.5)	Chromium	17.4	mg/kg		none
SC2SB26-051-(0-0.5)	Cobalt	2.17	mg/kg		none
SC2SB26-051-(0-0.5)	Copper	27.1	mg/kg		none
SC2SB26-051-(0-0.5)	Iron	19000	mg/kg		none
SC2SB26-051-(0-0.5)	Lead	109	mg/kg		J
SC2SB26-051-(0-0.5)	Lithium	2.29	mg/kg		none
SC2SB26-051-(0-0.5)	Manganese	196	mg/kg		none
SC2SB26-051-(0-0.5)	Mercury	0.059	mg/kg		none
SC2SB26-051-(0-0.5)	Molybdenum	3.43	mg/kg		J-
SC2SB26-051-(0-0.5)	Nickel	9.15	mg/kg		none
SC2SB26-051-(0-0.5)	Selenium	0.43	mg/kg	U	none
SC2SB26-051-(0-0.5)	Silver	0.048	mg/kg	U	none
SC2SB26-051-(0-0.5)	Strontium	49.3	mg/kg		J
SC2SB26-051-(0-0.5)	Thallium	0.079	mg/kg	U	none
SC2SB26-051-(0-0.5)	Tin	0.46	mg/kg	U	none
SC2SB26-051-(0-0.5)	Titanium	22.2	mg/kg		none
SC2SB26-051-(0-0.5)	Vanadium	9.89	mg/kg		none
SC2SB26-051-(0-0.5)	Zinc	443	mg/kg		J
SC3SB27-053-(0-0.5)	Aluminum	1290	mg/kg		J
SC3SB27-053-(0-0.5)	Antimony	3.84	mg/kg		J-
SC3SB27-053-(0-0.5)	Arsenic	2.75	mg/kg		none
SC3SB27-053-(0-0.5)	Barium	159	mg/kg		none
SC3SB27-053-(0-0.5)	Beryllium	0.031	mg/kg	B	J
SC3SB27-053-(0-0.5)	Boron	0.95	mg/kg	U	UJ
SC3SB27-053-(0-0.5)	Cadmium	0.99	mg/kg		none
SC3SB27-053-(0-0.5)	Chromium	22.5	mg/kg		none
SC3SB27-053-(0-0.5)	Cobalt	2.19	mg/kg		none
SC3SB27-053-(0-0.5)	Copper	34.1	mg/kg		none
SC3SB27-053-(0-0.5)	Iron	23900	mg/kg		none
SC3SB27-053-(0-0.5)	Lead	102	mg/kg		J
SC3SB27-053-(0-0.5)	Lithium	1.5	mg/kg	B	J
SC3SB27-053-(0-0.5)	Manganese	268	mg/kg		none
SC3SB27-053-(0-0.5)	Mercury	0.014	mg/kg		U
SC3SB27-053-(0-0.5)	Molybdenum	3.14	mg/kg		J-
SC3SB27-053-(0-0.5)	Nickel	11.6	mg/kg		none
SC3SB27-053-(0-0.5)	Selenium	0.43	mg/kg	U	none
SC3SB27-053-(0-0.5)	Silver	0.048	mg/kg	U	none
SC3SB27-053-(0-0.5)	Strontium	35.5	mg/kg		J

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SC3SB27-053-(0-0.5)	Thallium	0.078	mg/kg	U	none
SC3SB27-053-(0-0.5)	Tin	1.86	mg/kg	B	J
SC3SB27-053-(0-0.5)	Titanium	36.9	mg/kg		none
SC3SB27-053-(0-0.5)	Vanadium	8.95	mg/kg		none
SC3SB27-053-(0-0.5)	Zinc	669	mg/kg		J
SC3SS09-009-(0-1)	Aluminum	1250	mg/kg		none
SC3SS09-009-(0-1)	Antimony	0.19	mg/kg	U	R
SC3SS09-009-(0-1)	Arsenic	0.16	mg/kg	U	none
SC3SS09-009-(0-1)	Barium	285	mg/kg		none
SC3SS09-009-(0-1)	Beryllium	0.079	mg/kg	B	J
SC3SS09-009-(0-1)	Boron	0.94	mg/kg	U	none
SC3SS09-009-(0-1)	Cadmium	0.93	mg/kg		none
SC3SS09-009-(0-1)	Chromium	17.8	mg/kg		none
SC3SS09-009-(0-1)	Cobalt	1.57	mg/kg		none
SC3SS09-009-(0-1)	Copper	31.8	mg/kg		none
SC3SS09-009-(0-1)	Iron	18800	mg/kg		J
SC3SS09-009-(0-1)	Lead	53.6	mg/kg		none
SC3SS09-009-(0-1)	Lithium	1.7	mg/kg	B	J
SC3SS09-009-(0-1)	Manganese	214	mg/kg		J
SC3SS09-009-(0-1)	Mercury	0.002	mg/kg	U	none
SC3SS09-009-(0-1)	Molybdenum	1.98	mg/kg		none
SC3SS09-009-(0-1)	Nickel	8.67	mg/kg		none
SC3SS09-009-(0-1)	Selenium	0.42	mg/kg	U	none
SC3SS09-009-(0-1)	Silver	0.047	mg/kg	U	none
SC3SS09-009-(0-1)	Strontium	36.5	mg/kg		none
SC3SS09-009-(0-1)	Thallium	0.077	mg/kg	U	none
SC3SS09-009-(0-1)	Tin	0.64	mg/kg	B	J
SC3SS09-009-(0-1)	Titanium	44.1	mg/kg		none
SC3SS09-009-(0-1)	Vanadium	9.25	mg/kg		none
SC3SS09-009-(0-1)	Zinc	756	mg/kg		none
SC4SB28-055-(0-0.5)	Aluminum	1770	mg/kg		none
SC4SB28-055-(0-0.5)	Antimony	0.23	mg/kg	U	R
SC4SB28-055-(0-0.5)	Arsenic	6.68	mg/kg		none
SC4SB28-055-(0-0.5)	Barium	179	mg/kg		J
SC4SB28-055-(0-0.5)	Beryllium	0.35	mg/kg		none
SC4SB28-055-(0-0.5)	Boron	7.81	mg/kg		J-
SC4SB28-055-(0-0.5)	Cadmium	0.02	mg/kg	U	none
SC4SB28-055-(0-0.5)	Chromium	25.4	mg/kg		J
SC4SB28-055-(0-0.5)	Cobalt	3.36	mg/kg		none
SC4SB28-055-(0-0.5)	Copper	60.4	mg/kg		J
SC4SB28-055-(0-0.5)	Iron	21600	mg/kg		none
SC4SB28-055-(0-0.5)	Lead	49.1	mg/kg		J
SC4SB28-055-(0-0.5)	Lithium	2.01	mg/kg	B	J
SC4SB28-055-(0-0.5)	Manganese	199	mg/kg		J
SC4SB28-055-(0-0.5)	Mercury	0.035	mg/kg		U
SC4SB28-055-(0-0.5)	Molybdenum	4.44	mg/kg		J-
SC4SB28-055-(0-0.5)	Nickel	12.7	mg/kg		none
SC4SB28-055-(0-0.5)	Selenium	0.51	mg/kg	U	none
SC4SB28-055-(0-0.5)	Silver	0.057	mg/kg	U	none
SC4SB28-055-(0-0.5)	Strontium	57	mg/kg		J
SC4SB28-055-(0-0.5)	Thallium	0.093	mg/kg	U	none
SC4SB28-055-(0-0.5)	Tin	4.95	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SC4SB28-055-(0-0.5)	Titanium	48.8	mg/kg		none
SC4SB28-055-(0-0.5)	Vanadium	10.6	mg/kg		none
SC4SB28-055-(0-0.5)	Zinc	507	mg/kg		none
SC4SS10-010-(0-1)	Aluminum	10700	mg/kg		none
SC4SS10-010-(0-1)	Antimony	0.21	mg/kg	U	R
SC4SS10-010-(0-1)	Arsenic	1.52	mg/kg	B	J
SC4SS10-010-(0-1)	Barium	474	mg/kg		none
SC4SS10-010-(0-1)	Beryllium	0.95	mg/kg		none
SC4SS10-010-(0-1)	Boron	28.2	mg/kg		none
SC4SS10-010-(0-1)	Cadmium	0.4	mg/kg		none
SC4SS10-010-(0-1)	Chromium	16.1	mg/kg		none
SC4SS10-010-(0-1)	Cobalt	5.1	mg/kg		none
SC4SS10-010-(0-1)	Copper	120	mg/kg		none
SC4SS10-010-(0-1)	Iron	14900	mg/kg		J
SC4SS10-010-(0-1)	Lead	65.8	mg/kg		none
SC4SS10-010-(0-1)	Lithium	9.72	mg/kg		none
SC4SS10-010-(0-1)	Manganese	278	mg/kg		J
SC4SS10-010-(0-1)	Mercury	0.15	mg/kg		none
SC4SS10-010-(0-1)	Molybdenum	5.04	mg/kg		none
SC4SS10-010-(0-1)	Nickel	14.7	mg/kg		none
SC4SS10-010-(0-1)	Selenium	0.47	mg/kg	U	none
SC4SS10-010-(0-1)	Silver	0.053	mg/kg	U	none
SC4SS10-010-(0-1)	Strontium	326	mg/kg		none
SC4SS10-010-(0-1)	Thallium	0.086	mg/kg	U	none
SC4SS10-010-(0-1)	Tin	7.08	mg/kg		none
SC4SS10-010-(0-1)	Titanium	331	mg/kg		none
SC4SS10-010-(0-1)	Vanadium	38.2	mg/kg		none
SC4SS10-010-(0-1)	Zinc	559	mg/kg		none
SC5SB29-057-(0-0.5)	Aluminum	1720	mg/kg		J
SC5SB29-057-(0-0.5)	Antimony	2.56	mg/kg	B	J
SC5SB29-057-(0-0.5)	Arsenic	2.05	mg/kg		none
SC5SB29-057-(0-0.5)	Barium	133	mg/kg		none
SC5SB29-057-(0-0.5)	Beryllium	0.084	mg/kg	B	J
SC5SB29-057-(0-0.5)	Boron	1.03	mg/kg	U	UJ
SC5SB29-057-(0-0.5)	Cadmium	0.54	mg/kg		none
SC5SB29-057-(0-0.5)	Chromium	16.3	mg/kg		none
SC5SB29-057-(0-0.5)	Cobalt	1.71	mg/kg		none
SC5SB29-057-(0-0.5)	Copper	19.5	mg/kg		none
SC5SB29-057-(0-0.5)	Iron	12800	mg/kg		none
SC5SB29-057-(0-0.5)	Lead	55.6	mg/kg		J
SC5SB29-057-(0-0.5)	Lithium	1.8	mg/kg	B	J
SC5SB29-057-(0-0.5)	Manganese	155	mg/kg		none
SC5SB29-057-(0-0.5)	Mercury	0.015	mg/kg		U
SC5SB29-057-(0-0.5)	Molybdenum	1.28	mg/kg	B	J
SC5SB29-057-(0-0.5)	Nickel	7.74	mg/kg		none
SC5SB29-057-(0-0.5)	Selenium	0.46	mg/kg	U	none
SC5SB29-057-(0-0.5)	Silver	0.051	mg/kg	U	none
SC5SB29-057-(0-0.5)	Strontium	34.4	mg/kg		J
SC5SB29-057-(0-0.5)	Thallium	0.084	mg/kg	U	none
SC5SB29-057-(0-0.5)	Tin	0.49	mg/kg	U	none
SC5SB29-057-(0-0.5)	Titanium	15.1	mg/kg		none
SC5SB29-057-(0-0.5)	Vanadium	8.51	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SC5SB29-057-(0-0.5)	Zinc	522	mg/kg		J
SC6SB30-059-(0-0.5)	Aluminum	1320	mg/kg		J
SC6SB30-059-(0-0.5)	Antimony	0.2	mg/kg	U	R
SC6SB30-059-(0-0.5)	Arsenic	2.81	mg/kg		none
SC6SB30-059-(0-0.5)	Barium	297	mg/kg		none
SC6SB30-059-(0-0.5)	Beryllium	0.092	mg/kg	B	J
SC6SB30-059-(0-0.5)	Boron	5.44	mg/kg		U
SC6SB30-059-(0-0.5)	Cadmium	0.023	mg/kg	B	J
SC6SB30-059-(0-0.5)	Chromium	20.6	mg/kg		none
SC6SB30-059-(0-0.5)	Cobalt	1.69	mg/kg		none
SC6SB30-059-(0-0.5)	Copper	27.9	mg/kg		none
SC6SB30-059-(0-0.5)	Iron	13300	mg/kg		none
SC6SB30-059-(0-0.5)	Lead	60.8	mg/kg		J
SC6SB30-059-(0-0.5)	Lithium	0.76	mg/kg	B	J
SC6SB30-059-(0-0.5)	Manganese	148	mg/kg		J
SC6SB30-059-(0-0.5)	Mercury	0.002	mg/kg	U	none
SC6SB30-059-(0-0.5)	Molybdenum	2.69	mg/kg		none
SC6SB30-059-(0-0.5)	Nickel	6.73	mg/kg		none
SC6SB30-059-(0-0.5)	Selenium	0.44	mg/kg	U	none
SC6SB30-059-(0-0.5)	Silver	0.049	mg/kg	U	none
SC6SB30-059-(0-0.5)	Strontium	25.2	mg/kg		J
SC6SB30-059-(0-0.5)	Thallium	0.08	mg/kg	U	none
SC6SB30-059-(0-0.5)	Tin	0.46	mg/kg	U	none
SC6SB30-059-(0-0.5)	Titanium	25.3	mg/kg		none
SC6SB30-059-(0-0.5)	Vanadium	5.65	mg/kg		none
SC6SB30-059-(0-0.5)	Zinc	903	mg/kg		J
SD1SB31-061-(0-0.5)	Aluminum	9130	mg/kg		none
SD1SB31-061-(0-0.5)	Antimony	2.81	mg/kg	B	J
SD1SB31-061-(0-0.5)	Arsenic	1.42	mg/kg	B	J
SD1SB31-061-(0-0.5)	Barium	150	mg/kg		J
SD1SB31-061-(0-0.5)	Beryllium	0.69	mg/kg		none
SD1SB31-061-(0-0.5)	Boron	2.43	mg/kg	B	J
SD1SB31-061-(0-0.5)	Cadmium	0.21	mg/kg	B	J
SD1SB31-061-(0-0.5)	Chromium	12.9	mg/kg		none
SD1SB31-061-(0-0.5)	Cobalt	5.09	mg/kg		none
SD1SB31-061-(0-0.5)	Copper	11.5	mg/kg		none
SD1SB31-061-(0-0.5)	Iron	11100	mg/kg		none
SD1SB31-061-(0-0.5)	Lead	15.2	mg/kg		none
SD1SB31-061-(0-0.5)	Lithium	13.6	mg/kg		none
SD1SB31-061-(0-0.5)	Manganese	167	mg/kg		J
SD1SB31-061-(0-0.5)	Mercury	0.0039	mg/kg	B	J
SD1SB31-061-(0-0.5)	Molybdenum	0.078	mg/kg	U	UJ
SD1SB31-061-(0-0.5)	Nickel	12.4	mg/kg		none
SD1SB31-061-(0-0.5)	Selenium	0.53	mg/kg	U	UJ
SD1SB31-061-(0-0.5)	Silver	0.074	mg/kg	B	U
SD1SB31-061-(0-0.5)	Strontium	142	mg/kg		none
SD1SB31-061-(0-0.5)	Thallium	0.096	mg/kg	U	none
SD1SB31-061-(0-0.5)	Tin	0.56	mg/kg	U	R
SD1SB31-061-(0-0.5)	Titanium	15.8	mg/kg		none
SD1SB31-061-(0-0.5)	Vanadium	20.6	mg/kg		none
SD1SB31-061-(0-0.5)	Zinc	125	mg/kg		none
SD2SB32-063-(0-0.5)	Aluminum	8510	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SD2SB32-063-(0-0.5)	Antimony	0.22	mg/kg	U	R
SD2SB32-063-(0-0.5)	Arsenic	3.09	mg/kg		none
SD2SB32-063-(0-0.5)	Barium	119	mg/kg		J
SD2SB32-063-(0-0.5)	Beryllium	0.56	mg/kg		none
SD2SB32-063-(0-0.5)	Boron	9.61	mg/kg		J-
SD2SB32-063-(0-0.5)	Cadmium	0.019	mg/kg	U	none
SD2SB32-063-(0-0.5)	Chromium	10.5	mg/kg		none
SD2SB32-063-(0-0.5)	Cobalt	6.45	mg/kg		none
SD2SB32-063-(0-0.5)	Copper	11.6	mg/kg		none
SD2SB32-063-(0-0.5)	Iron	11100	mg/kg		none
SD2SB32-063-(0-0.5)	Lead	15.9	mg/kg		none
SD2SB32-063-(0-0.5)	Lithium	14.7	mg/kg		none
SD2SB32-063-(0-0.5)	Manganese	546	mg/kg		J
SD2SB32-063-(0-0.5)	Mercury	0.0023	mg/kg	U	none
SD2SB32-063-(0-0.5)	Molybdenum	0.43	mg/kg	B	J
SD2SB32-063-(0-0.5)	Nickel	14.2	mg/kg		none
SD2SB32-063-(0-0.5)	Selenium	0.49	mg/kg	U	UJ
SD2SB32-063-(0-0.5)	Silver	0.055	mg/kg	U	UJ
SD2SB32-063-(0-0.5)	Strontium	52.9	mg/kg		none
SD2SB32-063-(0-0.5)	Thallium	0.09	mg/kg	U	none
SD2SB32-063-(0-0.5)	Tin	0.52	mg/kg	U	R
SD2SB32-063-(0-0.5)	Titanium	16.2	mg/kg		none
SD2SB32-063-(0-0.5)	Vanadium	16.9	mg/kg		none
SD2SB32-063-(0-0.5)	Zinc	76.3	mg/kg		none
SD3SB33-065-(0-0.5)	Aluminum	15000	mg/kg		none
SD3SB33-065-(0-0.5)	Antimony	0.28	mg/kg	U	R
SD3SB33-065-(0-0.5)	Arsenic	17.6	mg/kg		none
SD3SB33-065-(0-0.5)	Barium	122	mg/kg		J
SD3SB33-065-(0-0.5)	Beryllium	1.12	mg/kg		none
SD3SB33-065-(0-0.5)	Boron	14.8	mg/kg		J-
SD3SB33-065-(0-0.5)	Cadmium	0.024	mg/kg	U	none
SD3SB33-065-(0-0.5)	Chromium	20.1	mg/kg		none
SD3SB33-065-(0-0.5)	Cobalt	8.43	mg/kg		none
SD3SB33-065-(0-0.5)	Copper	14.6	mg/kg		none
SD3SB33-065-(0-0.5)	Iron	21500	mg/kg		none
SD3SB33-065-(0-0.5)	Lead	37.9	mg/kg		none
SD3SB33-065-(0-0.5)	Lithium	28	mg/kg		none
SD3SB33-065-(0-0.5)	Manganese	297	mg/kg		J
SD3SB33-065-(0-0.5)	Mercury	0.0029	mg/kg	U	none
SD3SB33-065-(0-0.5)	Molybdenum	0.6	mg/kg	B	J
SD3SB33-065-(0-0.5)	Nickel	22.2	mg/kg		none
SD3SB33-065-(0-0.5)	Selenium	0.61	mg/kg	U	UJ
SD3SB33-065-(0-0.5)	Silver	0.068	mg/kg	U	UJ
SD3SB33-065-(0-0.5)	Strontium	35.5	mg/kg		none
SD3SB33-065-(0-0.5)	Thallium	0.11	mg/kg	U	none
SD3SB33-065-(0-0.5)	Tin	0.65	mg/kg	U	R
SD3SB33-065-(0-0.5)	Titanium	20.4	mg/kg		none
SD3SB33-065-(0-0.5)	Vanadium	32.9	mg/kg		none
SD3SB33-065-(0-0.5)	Zinc	70	mg/kg		none
SD4SB34-067-(0-0.5)	Aluminum	3640	mg/kg		J
SD4SB34-067-(0-0.5)	Antimony	0.2	mg/kg	U	R
SD4SB34-067-(0-0.5)	Arsenic	5.39	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SD4SB34-067-(0-0.5)	Barium	382	mg/kg		none
SD4SB34-067-(0-0.5)	Beryllium	0.36	mg/kg		none
SD4SB34-067-(0-0.5)	Boron	11.7	mg/kg		J-
SD4SB34-067-(0-0.5)	Cadmium	0.065	mg/kg	B	J
SD4SB34-067-(0-0.5)	Chromium	17.1	mg/kg		none
SD4SB34-067-(0-0.5)	Cobalt	3.09	mg/kg		none
SD4SB34-067-(0-0.5)	Copper	62.8	mg/kg		none
SD4SB34-067-(0-0.5)	Iron	17200	mg/kg		none
SD4SB34-067-(0-0.5)	Lead	59.2	mg/kg		J
SD4SB34-067-(0-0.5)	Lithium	3.59	mg/kg		none
SD4SB34-067-(0-0.5)	Manganese	194	mg/kg		J
SD4SB34-067-(0-0.5)	Mercury	0.075	mg/kg		none
SD4SB34-067-(0-0.5)	Molybdenum	2.94	mg/kg		none
SD4SB34-067-(0-0.5)	Nickel	10	mg/kg		none
SD4SB34-067-(0-0.5)	Selenium	0.45	mg/kg	U	none
SD4SB34-067-(0-0.5)	Silver	0.05	mg/kg	U	none
SD4SB34-067-(0-0.5)	Strontium	111	mg/kg		J
SD4SB34-067-(0-0.5)	Thallium	0.081	mg/kg	U	none
SD4SB34-067-(0-0.5)	Tin	3.25	mg/kg	B	J
SD4SB34-067-(0-0.5)	Titanium	61	mg/kg		none
SD4SB34-067-(0-0.5)	Vanadium	13.2	mg/kg		none
SD4SB34-067-(0-0.5)	Zinc	728	mg/kg		J
SD5SB35-069-(0-0.5)	Aluminum	1280	mg/kg		J
SD5SB35-069-(0-0.5)	Antimony	0.2	mg/kg	U	UJ
SD5SB35-069-(0-0.5)	Arsenic	2.06	mg/kg		none
SD5SB35-069-(0-0.5)	Barium	842	mg/kg		none
SD5SB35-069-(0-0.5)	Beryllium	0.064	mg/kg	B	J
SD5SB35-069-(0-0.5)	Boron	4.04	mg/kg	B	J
SD5SB35-069-(0-0.5)	Cadmium	1.41	mg/kg		none
SD5SB35-069-(0-0.5)	Chromium	20.6	mg/kg		none
SD5SB35-069-(0-0.5)	Cobalt	2.07	mg/kg		none
SD5SB35-069-(0-0.5)	Copper	15.6	mg/kg		none
SD5SB35-069-(0-0.5)	Iron	9610	mg/kg		J
SD5SB35-069-(0-0.5)	Lead	61.3	mg/kg		J
SD5SB35-069-(0-0.5)	Lithium	2.89	mg/kg		none
SD5SB35-069-(0-0.5)	Manganese	163	mg/kg		none
SD5SB35-069-(0-0.5)	Mercury	0.0056	mg/kg	B	U
SD5SB35-069-(0-0.5)	Molybdenum	1.26	mg/kg		none
SD5SB35-069-(0-0.5)	Nickel	7.57	mg/kg		none
SD5SB35-069-(0-0.5)	Selenium	0.43	mg/kg	U	none
SD5SB35-069-(0-0.5)	Silver	0.048	mg/kg	U	none
SD5SB35-069-(0-0.5)	Strontium	61.1	mg/kg		J
SD5SB35-069-(0-0.5)	Thallium	0.079	mg/kg	U	none
SD5SB35-069-(0-0.5)	Tin	0.99	mg/kg	B	J
SD5SB35-069-(0-0.5)	Titanium	30	mg/kg		none
SD5SB35-069-(0-0.5)	Vanadium	6.12	mg/kg		none
SD5SB35-069-(0-0.5)	Zinc	4770	mg/kg		J
SD6SB36-071-(0-0.5)	Aluminum	1060	mg/kg		J
SD6SB36-071-(0-0.5)	Antimony	0.2	mg/kg	U	UJ
SD6SB36-071-(0-0.5)	Arsenic	4.47	mg/kg		none
SD6SB36-071-(0-0.5)	Barium	533	mg/kg		none
SD6SB36-071-(0-0.5)	Beryllium	0.058	mg/kg	B	J

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SD6SB36-071-(0-0.5)	Boron	3.97	mg/kg	B	J
SD6SB36-071-(0-0.5)	Cadmium	0.33	mg/kg		none
SD6SB36-071-(0-0.5)	Chromium	25.6	mg/kg		none
SD6SB36-071-(0-0.5)	Cobalt	2.52	mg/kg		none
SD6SB36-071-(0-0.5)	Copper	32.2	mg/kg		none
SD6SB36-071-(0-0.5)	Iron	18500	mg/kg		J
SD6SB36-071-(0-0.5)	Lead	87.6	mg/kg		J
SD6SB36-071-(0-0.5)	Lithium	1.56	mg/kg	B	J
SD6SB36-071-(0-0.5)	Manganese	206	mg/kg		none
SD6SB36-071-(0-0.5)	Mercury	0.0032	mg/kg	B	U
SD6SB36-071-(0-0.5)	Molybdenum	5.48	mg/kg		none
SD6SB36-071-(0-0.5)	Nickel	20.3	mg/kg		none
SD6SB36-071-(0-0.5)	Selenium	0.43	mg/kg	U	none
SD6SB36-071-(0-0.5)	Silver	0.048	mg/kg	U	none
SD6SB36-071-(0-0.5)	Strontium	20.3	mg/kg		J
SD6SB36-071-(0-0.5)	Thallium	0.078	mg/kg	U	none
SD6SB36-071-(0-0.5)	Tin	2.95	mg/kg	B	J
SD6SB36-071-(0-0.5)	Titanium	44.3	mg/kg		none
SD6SB36-071-(0-0.5)	Vanadium	6.18	mg/kg		none
SD6SB36-071-(0-0.5)	Zinc	703	mg/kg		J
SE1SB37-073-(0-0.5)	Aluminum	10200	mg/kg		none
SE1SB37-073-(0-0.5)	Antimony	0.23	mg/kg	U	R
SE1SB37-073-(0-0.5)	Arsenic	4.31	mg/kg		none
SE1SB37-073-(0-0.5)	Barium	145	mg/kg		J
SE1SB37-073-(0-0.5)	Beryllium	0.74	mg/kg		none
SE1SB37-073-(0-0.5)	Boron	10.8	mg/kg		J-
SE1SB37-073-(0-0.5)	Cadmium	0.02	mg/kg	U	none
SE1SB37-073-(0-0.5)	Chromium	12.1	mg/kg		none
SE1SB37-073-(0-0.5)	Cobalt	6.2	mg/kg		none
SE1SB37-073-(0-0.5)	Copper	17.7	mg/kg		none
SE1SB37-073-(0-0.5)	Iron	13100	mg/kg		none
SE1SB37-073-(0-0.5)	Lead	14.4	mg/kg		none
SE1SB37-073-(0-0.5)	Lithium	17.9	mg/kg		none
SE1SB37-073-(0-0.5)	Manganese	231	mg/kg		J
SE1SB37-073-(0-0.5)	Mercury	0.019	mg/kg		none
SE1SB37-073-(0-0.5)	Molybdenum	0.37	mg/kg	B	J
SE1SB37-073-(0-0.5)	Nickel	14.6	mg/kg		none
SE1SB37-073-(0-0.5)	Selenium	0.52	mg/kg	U	UJ
SE1SB37-073-(0-0.5)	Silver	0.057	mg/kg	U	UJ
SE1SB37-073-(0-0.5)	Strontium	58.1	mg/kg		none
SE1SB37-073-(0-0.5)	Thallium	0.094	mg/kg	U	none
SE1SB37-073-(0-0.5)	Tin	0.55	mg/kg	U	R
SE1SB37-073-(0-0.5)	Titanium	14.7	mg/kg		none
SE1SB37-073-(0-0.5)	Vanadium	21	mg/kg		none
SE1SB37-073-(0-0.5)	Zinc	135	mg/kg		none
SE2SB-38-076 -(0-0.5)	Aluminum	3890	mg/kg		J
SE2SB-38-076 -(0-0.5)	Antimony	1.71	mg/kg	B	J
SE2SB-38-076 -(0-0.5)	Arsenic	0.17	mg/kg	U	none
SE2SB-38-076 -(0-0.5)	Barium	310	mg/kg		none
SE2SB-38-076 -(0-0.5)	Beryllium	0.75	mg/kg		none
SE2SB-38-076 -(0-0.5)	Boron	0.99	mg/kg	U	none
SE2SB-38-076 -(0-0.5)	Cadmium	0.55	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SE2SB-38-076 -(0-0.5)	Chromium	12.5	mg/kg		none
SE2SB-38-076 -(0-0.5)	Cobalt	2.16	mg/kg		none
SE2SB-38-076 -(0-0.5)	Copper	18.3	mg/kg		none
SE2SB-38-076 -(0-0.5)	Iron	14500	mg/kg		none
SE2SB-38-076 -(0-0.5)	Lead	87.7	mg/kg		J
SE2SB-38-076 -(0-0.5)	Lithium	4.88	mg/kg		none
SE2SB-38-076 -(0-0.5)	Manganese	167	mg/kg		none
SE2SB-38-076 -(0-0.5)	Mercury	0.031	mg/kg		none
SE2SB-38-076 -(0-0.5)	Molybdenum	2.32	mg/kg		none
SE2SB-38-076 -(0-0.5)	Nickel	10.5	mg/kg		none
SE2SB-38-076 -(0-0.5)	Selenium	0.45	mg/kg	U	none
SE2SB-38-076 -(0-0.5)	Silver	0.05	mg/kg	U	none
SE2SB-38-076 -(0-0.5)	Strontium	88.8	mg/kg		J
SE2SB-38-076 -(0-0.5)	Thallium	0.081	mg/kg	U	none
SE2SB-38-076 -(0-0.5)	Tin	0.47	mg/kg	U	none
SE2SB-38-076 -(0-0.5)	Titanium	24.6	mg/kg		none
SE2SB-38-076 -(0-0.5)	Vanadium	12	mg/kg		none
SE2SB-38-076 -(0-0.5)	Zinc	749	mg/kg		J
SE3SB39-077-(0-0.5)	Aluminum	2700	mg/kg		J
SE3SB39-077-(0-0.5)	Antimony	0.23	mg/kg	U	R
SE3SB39-077-(0-0.5)	Arsenic	7.68	mg/kg		none
SE3SB39-077-(0-0.5)	Barium	306	mg/kg		none
SE3SB39-077-(0-0.5)	Beryllium	0.17	mg/kg	B	J
SE3SB39-077-(0-0.5)	Boron	1.15	mg/kg	U	UJ
SE3SB39-077-(0-0.5)	Cadmium	1.04	mg/kg		none
SE3SB39-077-(0-0.5)	Chromium	22.6	mg/kg		none
SE3SB39-077-(0-0.5)	Cobalt	2.25	mg/kg		none
SE3SB39-077-(0-0.5)	Copper	47.8	mg/kg		none
SE3SB39-077-(0-0.5)	Iron	14400	mg/kg		none
SE3SB39-077-(0-0.5)	Lead	204	mg/kg		J
SE3SB39-077-(0-0.5)	Lithium	3.66	mg/kg		none
SE3SB39-077-(0-0.5)	Manganese	194	mg/kg		none
SE3SB39-077-(0-0.5)	Mercury	0.031	mg/kg		none
SE3SB39-077-(0-0.5)	Molybdenum	2.57	mg/kg		J-
SE3SB39-077-(0-0.5)	Nickel	12.6	mg/kg		none
SE3SB39-077-(0-0.5)	Selenium	0.52	mg/kg	U	none
SE3SB39-077-(0-0.5)	Silver	0.057	mg/kg	U	none
SE3SB39-077-(0-0.5)	Strontium	108	mg/kg		J
SE3SB39-077-(0-0.5)	Thallium	0.094	mg/kg	U	none
SE3SB39-077-(0-0.5)	Tin	0.55	mg/kg	U	none
SE3SB39-077-(0-0.5)	Titanium	19.2	mg/kg		none
SE3SB39-077-(0-0.5)	Vanadium	14.7	mg/kg		none
SE3SB39-077-(0-0.5)	Zinc	1320	mg/kg		J
SE4SB40-079-(0-0.5)	Aluminum	3250	mg/kg		J
SE4SB40-079-(0-0.5)	Antimony	0.41	mg/kg	U	R
SE4SB40-079-(0-0.5)	Arsenic	11.7	mg/kg		none
SE4SB40-079-(0-0.5)	Barium	336	mg/kg		none
SE4SB40-079-(0-0.5)	Beryllium	0.2	mg/kg	B	J
SE4SB40-079-(0-0.5)	Boron	15.3	mg/kg		U
SE4SB40-079-(0-0.5)	Cadmium	0.034	mg/kg	U	none
SE4SB40-079-(0-0.5)	Chromium	12.9	mg/kg		none
SE4SB40-079-(0-0.5)	Cobalt	3.66	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SE4SB40-079-(0-0.5)	Copper	36.9	mg/kg		none
SE4SB40-079-(0-0.5)	Iron	44600	mg/kg		none
SE4SB40-079-(0-0.5)	Lead	37.2	mg/kg		J
SE4SB40-079-(0-0.5)	Lithium	5.69	mg/kg		none
SE4SB40-079-(0-0.5)	Manganese	274	mg/kg		J
SE4SB40-079-(0-0.5)	Mercury	0.022	mg/kg		none
SE4SB40-079-(0-0.5)	Molybdenum	2.72	mg/kg		none
SE4SB40-079-(0-0.5)	Nickel	13.4	mg/kg		none
SE4SB40-079-(0-0.5)	Selenium	0.89	mg/kg	U	none
SE4SB40-079-(0-0.5)	Silver	0.099	mg/kg	U	none
SE4SB40-079-(0-0.5)	Strontium	77.6	mg/kg		J
SE4SB40-079-(0-0.5)	Thallium	0.16	mg/kg	U	none
SE4SB40-079-(0-0.5)	Tin	0.95	mg/kg	U	none
SE4SB40-079-(0-0.5)	Titanium	20.7	mg/kg		none
SE4SB40-079-(0-0.5)	Vanadium	9.76	mg/kg		none
SE4SB40-079-(0-0.5)	Zinc	523	mg/kg		J
SE5SB41-081-(0-0.5)	Aluminum	6250	mg/kg		J
SE5SB41-081-(0-0.5)	Antimony	0.21	mg/kg	U	R
SE5SB41-081-(0-0.5)	Arsenic	3.58	mg/kg		none
SE5SB41-081-(0-0.5)	Barium	83.6	mg/kg		none
SE5SB41-081-(0-0.5)	Beryllium	0.44	mg/kg		none
SE5SB41-081-(0-0.5)	Boron	7.68	mg/kg		U
SE5SB41-081-(0-0.5)	Cadmium	0.018	mg/kg	U	none
SE5SB41-081-(0-0.5)	Chromium	7.68	mg/kg		none
SE5SB41-081-(0-0.5)	Cobalt	4.13	mg/kg		none
SE5SB41-081-(0-0.5)	Copper	7.08	mg/kg		none
SE5SB41-081-(0-0.5)	Iron	9480	mg/kg		none
SE5SB41-081-(0-0.5)	Lead	32.7	mg/kg		J
SE5SB41-081-(0-0.5)	Lithium	10.2	mg/kg		none
SE5SB41-081-(0-0.5)	Manganese	224	mg/kg		J
SE5SB41-081-(0-0.5)	Mercury	0.0096	mg/kg	B	J
SE5SB41-081-(0-0.5)	Molybdenum	0.27	mg/kg	B	J
SE5SB41-081-(0-0.5)	Nickel	9.61	mg/kg		none
SE5SB41-081-(0-0.5)	Selenium	0.47	mg/kg	U	none
SE5SB41-081-(0-0.5)	Silver	0.052	mg/kg	U	none
SE5SB41-081-(0-0.5)	Strontium	68.5	mg/kg		J
SE5SB41-081-(0-0.5)	Thallium	0.086	mg/kg	U	none
SE5SB41-081-(0-0.5)	Tin	0.5	mg/kg	U	none
SE5SB41-081-(0-0.5)	Titanium	14.7	mg/kg		none
SE5SB41-081-(0-0.5)	Vanadium	14.1	mg/kg		none
SE5SB41-081-(0-0.5)	Zinc	62.4	mg/kg		J
SE6SB42-083-(0-0.5)	Aluminum	4360	mg/kg		J
SE6SB42-083-(0-0.5)	Antimony	0.22	mg/kg	U	R
SE6SB42-083-(0-0.5)	Arsenic	0.65	mg/kg	B	J
SE6SB42-083-(0-0.5)	Barium	204	mg/kg		none
SE6SB42-083-(0-0.5)	Beryllium	0.3	mg/kg		none
SE6SB42-083-(0-0.5)	Boron	6.89	mg/kg		J-
SE6SB42-083-(0-0.5)	Cadmium	0.018	mg/kg	U	none
SE6SB42-083-(0-0.5)	Chromium	15.2	mg/kg		none
SE6SB42-083-(0-0.5)	Cobalt	3.76	mg/kg		none
SE6SB42-083-(0-0.5)	Copper	29.7	mg/kg		none
SE6SB42-083-(0-0.5)	Iron	15200	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SE6SB42-083-(0-0.5)	Lead	44.3	mg/kg		J
SE6SB42-083-(0-0.5)	Lithium	7.43	mg/kg		none
SE6SB42-083-(0-0.5)	Manganese	235	mg/kg		J
SE6SB42-083-(0-0.5)	Mercury	0.029	mg/kg		none
SE6SB42-083-(0-0.5)	Molybdenum	1.08	mg/kg	B	J
SE6SB42-083-(0-0.5)	Nickel	12.5	mg/kg		none
SE6SB42-083-(0-0.5)	Selenium	0.48	mg/kg	U	none
SE6SB42-083-(0-0.5)	Silver	0.053	mg/kg	U	none
SE6SB42-083-(0-0.5)	Strontium	68.4	mg/kg		J
SE6SB42-083-(0-0.5)	Thallium	0.087	mg/kg	U	none
SE6SB42-083-(0-0.5)	Tin	1.72	mg/kg	B	J
SE6SB42-083-(0-0.5)	Titanium	21.8	mg/kg		none
SE6SB42-083-(0-0.5)	Vanadium	12.3	mg/kg		none
SE6SB42-083-(0-0.5)	Zinc	479	mg/kg		J
SF1SB43-085-(0-0.5)	Aluminum	2460	mg/kg		none
SF1SB43-085-(0-0.5)	Antimony	1.54	mg/kg	B	J
SF1SB43-085-(0-0.5)	Arsenic	1.58	mg/kg	B	J
SF1SB43-085-(0-0.5)	Barium	399	mg/kg		none
SF1SB43-085-(0-0.5)	Beryllium	0.27	mg/kg		none
SF1SB43-085-(0-0.5)	Boron	1.03	mg/kg	U	none
SF1SB43-085-(0-0.5)	Cadmium	0.5	mg/kg		none
SF1SB43-085-(0-0.5)	Chromium	18.6	mg/kg		none
SF1SB43-085-(0-0.5)	Cobalt	1.1	mg/kg		none
SF1SB43-085-(0-0.5)	Copper	12.9	mg/kg		none
SF1SB43-085-(0-0.5)	Iron	12200	mg/kg		none
SF1SB43-085-(0-0.5)	Lead	67.3	mg/kg		none
SF1SB43-085-(0-0.5)	Lithium	3.36	mg/kg		none
SF1SB43-085-(0-0.5)	Manganese	111	mg/kg		none
SF1SB43-085-(0-0.5)	Mercury	0.0058	mg/kg	B	J
SF1SB43-085-(0-0.5)	Molybdenum	0.97	mg/kg	B	J
SF1SB43-085-(0-0.5)	Nickel	8.07	mg/kg		none
SF1SB43-085-(0-0.5)	Selenium	0.46	mg/kg	U	none
SF1SB43-085-(0-0.5)	Silver	0.052	mg/kg	U	none
SF1SB43-085-(0-0.5)	Strontium	24.4	mg/kg		none
SF1SB43-085-(0-0.5)	Thallium	0.085	mg/kg	U	none
SF1SB43-085-(0-0.5)	Tin	0.49	mg/kg	U	none
SF1SB43-085-(0-0.5)	Titanium	29.4	mg/kg		none
SF1SB43-085-(0-0.5)	Vanadium	8.88	mg/kg		none
SF1SB43-085-(0-0.5)	Zinc	1060	mg/kg		J
SF2SB-44-087 -(0-0.5)	Aluminum	3490	mg/kg		J
SF2SB-44-087 -(0-0.5)	Antimony	1.42	mg/kg	B	J
SF2SB-44-087 -(0-0.5)	Arsenic	1.07	mg/kg	B	J
SF2SB-44-087 -(0-0.5)	Barium	65.6	mg/kg		none
SF2SB-44-087 -(0-0.5)	Beryllium	0.27	mg/kg		none
SF2SB-44-087 -(0-0.5)	Boron	1.09	mg/kg	U	none
SF2SB-44-087 -(0-0.5)	Cadmium	1.01	mg/kg		none
SF2SB-44-087 -(0-0.5)	Chromium	5.24	mg/kg		none
SF2SB-44-087 -(0-0.5)	Cobalt	2.49	mg/kg		none
SF2SB-44-087 -(0-0.5)	Copper	8.07	mg/kg		none
SF2SB-44-087 -(0-0.5)	Iron	7360	mg/kg		none
SF2SB-44-087 -(0-0.5)	Lead	14.9	mg/kg		J
SF2SB-44-087 -(0-0.5)	Lithium	5.44	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SF2SB-44-087 -(0-0.5)	Manganese	143	mg/kg		none
SF2SB-44-087 -(0-0.5)	Mercury	0.0084	mg/kg	B	U
SF2SB-44-087 -(0-0.5)	Molybdenum	0.072	mg/kg	U	none
SF2SB-44-087 -(0-0.5)	Nickel	6.4	mg/kg		none
SF2SB-44-087 -(0-0.5)	Selenium	0.49	mg/kg	U	none
SF2SB-44-087 -(0-0.5)	Silver	0.055	mg/kg	U	none
SF2SB-44-087 -(0-0.5)	Strontium	24.8	mg/kg		J
SF2SB-44-087 -(0-0.5)	Thallium	0.09	mg/kg	U	none
SF2SB-44-087 -(0-0.5)	Tin	0.52	mg/kg	U	none
SF2SB-44-087 -(0-0.5)	Titanium	19.9	mg/kg		none
SF2SB-44-087 -(0-0.5)	Vanadium	10	mg/kg		none
SF2SB-44-087 -(0-0.5)	Zinc	1890	mg/kg		J
SF3SB45-089-(0-0.5)	Aluminum	1550	mg/kg		J
SF3SB45-089-(0-0.5)	Antimony	0.22	mg/kg	U	R
SF3SB45-089-(0-0.5)	Arsenic	8.8	mg/kg		none
SF3SB45-089-(0-0.5)	Barium	272	mg/kg		none
SF3SB45-089-(0-0.5)	Beryllium	0.053	mg/kg	B	J
SF3SB45-089-(0-0.5)	Boron	1.08	mg/kg	U	UJ
SF3SB45-089-(0-0.5)	Cadmium	0.84	mg/kg		none
SF3SB45-089-(0-0.5)	Chromium	17.3	mg/kg		none
SF3SB45-089-(0-0.5)	Cobalt	2.28	mg/kg		none
SF3SB45-089-(0-0.5)	Copper	25.8	mg/kg		none
SF3SB45-089-(0-0.5)	Iron	23300	mg/kg		none
SF3SB45-089-(0-0.5)	Lead	103	mg/kg		J
SF3SB45-089-(0-0.5)	Lithium	2.14	mg/kg	B	J
SF3SB45-089-(0-0.5)	Manganese	178	mg/kg		none
SF3SB45-089-(0-0.5)	Mercury	0.02	mg/kg		none
SF3SB45-089-(0-0.5)	Molybdenum	1.93	mg/kg		J-
SF3SB45-089-(0-0.5)	Nickel	11.3	mg/kg		none
SF3SB45-089-(0-0.5)	Selenium	0.48	mg/kg	U	none
SF3SB45-089-(0-0.5)	Silver	0.054	mg/kg	U	none
SF3SB45-089-(0-0.5)	Strontium	24.1	mg/kg		J
SF3SB45-089-(0-0.5)	Thallium	0.088	mg/kg	U	none
SF3SB45-089-(0-0.5)	Tin	0.55	mg/kg	B	J
SF3SB45-089-(0-0.5)	Titanium	12.5	mg/kg		none
SF3SB45-089-(0-0.5)	Vanadium	8.51	mg/kg		none
SF3SB45-089-(0-0.5)	Zinc	399	mg/kg		J
SF4SB46-091-(0-0.5)	Aluminum	3480	mg/kg		J
SF4SB46-091-(0-0.5)	Antimony	0.22	mg/kg	U	R
SF4SB46-091-(0-0.5)	Arsenic	11.4	mg/kg		none
SF4SB46-091-(0-0.5)	Barium	158	mg/kg		none
SF4SB46-091-(0-0.5)	Beryllium	0.14	mg/kg	B	J
SF4SB46-091-(0-0.5)	Boron	1.07	mg/kg	U	UJ
SF4SB46-091-(0-0.5)	Cadmium	1.2	mg/kg		none
SF4SB46-091-(0-0.5)	Chromium	3.82	mg/kg		none
SF4SB46-091-(0-0.5)	Cobalt	3.65	mg/kg		none
SF4SB46-091-(0-0.5)	Copper	27.6	mg/kg		none
SF4SB46-091-(0-0.5)	Iron	32600	mg/kg		none
SF4SB46-091-(0-0.5)	Lead	74.5	mg/kg		J
SF4SB46-091-(0-0.5)	Lithium	4.57	mg/kg		none
SF4SB46-091-(0-0.5)	Manganese	372	mg/kg		none
SF4SB46-091-(0-0.5)	Mercury	0.026	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SF4SB46-091-(0-0.5)	Molybdenum	0.56	mg/kg	B	J
SF4SB46-091-(0-0.5)	Nickel	10	mg/kg		none
SF4SB46-091-(0-0.5)	Selenium	0.48	mg/kg	U	none
SF4SB46-091-(0-0.5)	Silver	0.054	mg/kg	U	none
SF4SB46-091-(0-0.5)	Strontium	53.6	mg/kg		J
SF4SB46-091-(0-0.5)	Thallium	0.088	mg/kg	U	none
SF4SB46-091-(0-0.5)	Tin	0.51	mg/kg	U	none
SF4SB46-091-(0-0.5)	Titanium	17.7	mg/kg		none
SF4SB46-091-(0-0.5)	Vanadium	13.2	mg/kg		none
SF4SB46-091-(0-0.5)	Zinc	506	mg/kg		J
SF5SB47-093-(0-0.5)	Aluminum	5540	mg/kg		J
SF5SB47-093-(0-0.5)	Antimony	0.23	mg/kg	U	R
SF5SB47-093-(0-0.5)	Arsenic	4.08	mg/kg		none
SF5SB47-093-(0-0.5)	Barium	168	mg/kg		none
SF5SB47-093-(0-0.5)	Beryllium	0.38	mg/kg		none
SF5SB47-093-(0-0.5)	Boron	9.9	mg/kg		J-
SF5SB47-093-(0-0.5)	Cadmium	0.019	mg/kg	U	none
SF5SB47-093-(0-0.5)	Chromium	11.8	mg/kg		none
SF5SB47-093-(0-0.5)	Cobalt	4.34	mg/kg		none
SF5SB47-093-(0-0.5)	Copper	14.9	mg/kg		none
SF5SB47-093-(0-0.5)	Iron	14200	mg/kg		none
SF5SB47-093-(0-0.5)	Lead	23.1	mg/kg		J
SF5SB47-093-(0-0.5)	Lithium	7.69	mg/kg		none
SF5SB47-093-(0-0.5)	Manganese	188	mg/kg		J
SF5SB47-093-(0-0.5)	Mercury	0.054	mg/kg		none
SF5SB47-093-(0-0.5)	Molybdenum	1.09	mg/kg	B	J
SF5SB47-093-(0-0.5)	Nickel	10.7	mg/kg		none
SF5SB47-093-(0-0.5)	Selenium	0.5	mg/kg	U	none
SF5SB47-093-(0-0.5)	Silver	0.055	mg/kg	U	none
SF5SB47-093-(0-0.5)	Strontium	55.3	mg/kg		J
SF5SB47-093-(0-0.5)	Thallium	0.091	mg/kg	U	none
SF5SB47-093-(0-0.5)	Tin	0.53	mg/kg	U	none
SF5SB47-093-(0-0.5)	Titanium	16.8	mg/kg		none
SF5SB47-093-(0-0.5)	Vanadium	12.9	mg/kg		none
SF5SB47-093-(0-0.5)	Zinc	230	mg/kg		J
SF6SB48-095-(0-0.5)	Aluminum	9400	mg/kg		J
SF6SB48-095-(0-0.5)	Antimony	0.22	mg/kg	U	R
SF6SB48-095-(0-0.5)	Arsenic	5.42	mg/kg		none
SF6SB48-095-(0-0.5)	Barium	111	mg/kg		none
SF6SB48-095-(0-0.5)	Beryllium	0.64	mg/kg		none
SF6SB48-095-(0-0.5)	Boron	14.6	mg/kg		J-
SF6SB48-095-(0-0.5)	Cadmium	0.019	mg/kg	U	none
SF6SB48-095-(0-0.5)	Chromium	11.9	mg/kg		none
SF6SB48-095-(0-0.5)	Cobalt	5.62	mg/kg		none
SF6SB48-095-(0-0.5)	Copper	10.2	mg/kg		none
SF6SB48-095-(0-0.5)	Iron	13500	mg/kg		none
SF6SB48-095-(0-0.5)	Lead	11.7	mg/kg		J
SF6SB48-095-(0-0.5)	Lithium	16.2	mg/kg		none
SF6SB48-095-(0-0.5)	Manganese	216	mg/kg		J
SF6SB48-095-(0-0.5)	Mercury	0.0063	mg/kg	B	J
SF6SB48-095-(0-0.5)	Molybdenum	0.41	mg/kg	B	J
SF6SB48-095-(0-0.5)	Nickel	13.4	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SF6SB48-095-(0-0.5)	Selenium	0.49	mg/kg	U	none
SF6SB48-095-(0-0.5)	Silver	0.055	mg/kg	U	none
SF6SB48-095-(0-0.5)	Strontium	53.1	mg/kg		J
SF6SB48-095-(0-0.5)	Thallium	0.09	mg/kg	U	none
SF6SB48-095-(0-0.5)	Tin	0.52	mg/kg	U	none
SF6SB48-095-(0-0.5)	Titanium	19.5	mg/kg		none
SF6SB48-095-(0-0.5)	Vanadium	17.7	mg/kg		none
SF6SB48-095-(0-0.5)	Zinc	60	mg/kg		J
SF6SB49-097-(0-0.5)	Aluminum	9640	mg/kg		J
SF6SB49-097-(0-0.5)	Antimony	0.21	mg/kg	U	R
SF6SB49-097-(0-0.5)	Arsenic	6.32	mg/kg		none
SF6SB49-097-(0-0.5)	Barium	123	mg/kg		none
SF6SB49-097-(0-0.5)	Beryllium	0.6	mg/kg		none
SF6SB49-097-(0-0.5)	Boron	10.5	mg/kg		J-
SF6SB49-097-(0-0.5)	Cadmium	0.018	mg/kg	U	none
SF6SB49-097-(0-0.5)	Chromium	15.2	mg/kg		none
SF6SB49-097-(0-0.5)	Cobalt	5.96	mg/kg		none
SF6SB49-097-(0-0.5)	Copper	22.1	mg/kg		none
SF6SB49-097-(0-0.5)	Iron	18500	mg/kg		none
SF6SB49-097-(0-0.5)	Lead	22.3	mg/kg		J
SF6SB49-097-(0-0.5)	Lithium	16	mg/kg		none
SF6SB49-097-(0-0.5)	Manganese	345	mg/kg		J
SF6SB49-097-(0-0.5)	Mercury	0.0061	mg/kg	B	J
SF6SB49-097-(0-0.5)	Molybdenum	0.99	mg/kg	B	J
SF6SB49-097-(0-0.5)	Nickel	16.7	mg/kg		none
SF6SB49-097-(0-0.5)	Selenium	0.46	mg/kg	U	none
SF6SB49-097-(0-0.5)	Silver	0.051	mg/kg	U	none
SF6SB49-097-(0-0.5)	Strontium	133	mg/kg		J
SF6SB49-097-(0-0.5)	Thallium	0.084	mg/kg	U	none
SF6SB49-097-(0-0.5)	Tin	1.68	mg/kg	B	J
SF6SB49-097-(0-0.5)	Titanium	18.1	mg/kg		none
SF6SB49-097-(0-0.5)	Vanadium	18.7	mg/kg		none
SF6SB49-097-(0-0.5)	Zinc	232	mg/kg		J
SF6SB50-099-(0-0.5)	Aluminum	7760	mg/kg		J
SF6SB50-099-(0-0.5)	Antimony	0.23	mg/kg	U	UJ
SF6SB50-099-(0-0.5)	Arsenic	7.86	mg/kg		none
SF6SB50-099-(0-0.5)	Barium	149	mg/kg		none
SF6SB50-099-(0-0.5)	Beryllium	0.63	mg/kg		none
SF6SB50-099-(0-0.5)	Boron	1.12	mg/kg	U	none
SF6SB50-099-(0-0.5)	Cadmium	0.39	mg/kg		none
SF6SB50-099-(0-0.5)	Chromium	14.1	mg/kg		none
SF6SB50-099-(0-0.5)	Cobalt	5.09	mg/kg		none
SF6SB50-099-(0-0.5)	Copper	9.88	mg/kg		none
SF6SB50-099-(0-0.5)	Iron	12200	mg/kg		none
SF6SB50-099-(0-0.5)	Lead	16.3	mg/kg		J
SF6SB50-099-(0-0.5)	Lithium	11.7	mg/kg		none
SF6SB50-099-(0-0.5)	Manganese	256	mg/kg		none
SF6SB50-099-(0-0.5)	Mercury	0.01	mg/kg	B	U
SF6SB50-099-(0-0.5)	Molybdenum	0.074	mg/kg	U	none
SF6SB50-099-(0-0.5)	Nickel	13.8	mg/kg		none
SF6SB50-099-(0-0.5)	Selenium	0.5	mg/kg	U	none
SF6SB50-099-(0-0.5)	Silver	0.056	mg/kg	U	none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SF6SB50-099-(0-0.5)	Strontium	50.5	mg/kg		J
SF6SB50-099-(0-0.5)	Thallium	0.092	mg/kg	U	none
SF6SB50-099-(0-0.5)	Tin	0.53	mg/kg	U	none
SF6SB50-099-(0-0.5)	Titanium	17.5	mg/kg		none
SF6SB50-099-(0-0.5)	Vanadium	18.4	mg/kg		none
SF6SB50-099-(0-0.5)	Zinc	63.6	mg/kg		J
SF7SB51-101-(0-0.5)	Aluminum	2090	mg/kg		J
SF7SB51-101-(0-0.5)	Antimony	0.21	mg/kg	U	R
SF7SB51-101-(0-0.5)	Arsenic	1.13	mg/kg	B	J
SF7SB51-101-(0-0.5)	Barium	18.6	mg/kg		none
SF7SB51-101-(0-0.5)	Beryllium	0.19	mg/kg	B	J
SF7SB51-101-(0-0.5)	Boron	2.35	mg/kg	B	U
SF7SB51-101-(0-0.5)	Cadmium	0.018	mg/kg	U	none
SF7SB51-101-(0-0.5)	Chromium	3.37	mg/kg		none
SF7SB51-101-(0-0.5)	Cobalt	2.15	mg/kg		none
SF7SB51-101-(0-0.5)	Copper	2.09	mg/kg		none
SF7SB51-101-(0-0.5)	Iron	3450	mg/kg		none
SF7SB51-101-(0-0.5)	Lead	2.82	mg/kg		J
SF7SB51-101-(0-0.5)	Lithium	3.13	mg/kg		none
SF7SB51-101-(0-0.5)	Manganese	59.3	mg/kg		J
SF7SB51-101-(0-0.5)	Mercury	0.0021	mg/kg	U	none
SF7SB51-101-(0-0.5)	Molybdenum	0.14	mg/kg	B	J
SF7SB51-101-(0-0.5)	Nickel	5.77	mg/kg		none
SF7SB51-101-(0-0.5)	Selenium	0.46	mg/kg	U	none
SF7SB51-101-(0-0.5)	Silver	0.051	mg/kg	U	none
SF7SB51-101-(0-0.5)	Strontium	18.2	mg/kg		J
SF7SB51-101-(0-0.5)	Thallium	0.084	mg/kg	U	none
SF7SB51-101-(0-0.5)	Tin	0.49	mg/kg	U	none
SF7SB51-101-(0-0.5)	Titanium	12.4	mg/kg		none
SF7SB51-101-(0-0.5)	Vanadium	6.8	mg/kg		none
SF7SB51-101-(0-0.5)	Zinc	16.4	mg/kg		J
SG1SB52-103-(0-0.5)	Aluminum	8790	mg/kg		none
SG1SB52-103-(0-0.5)	Antimony	1.8	mg/kg	B	J
SG1SB52-103-(0-0.5)	Arsenic	1.66	mg/kg	B	J
SG1SB52-103-(0-0.5)	Barium	122	mg/kg		none
SG1SB52-103-(0-0.5)	Beryllium	0.71	mg/kg		none
SG1SB52-103-(0-0.5)	Boron	1.03	mg/kg	U	none
SG1SB52-103-(0-0.5)	Cadmium	0.38	mg/kg		none
SG1SB52-103-(0-0.5)	Chromium	9.97	mg/kg		none
SG1SB52-103-(0-0.5)	Cobalt	4.23	mg/kg		none
SG1SB52-103-(0-0.5)	Copper	7.29	mg/kg		none
SG1SB52-103-(0-0.5)	Iron	11900	mg/kg		none
SG1SB52-103-(0-0.5)	Lead	13.1	mg/kg		none
SG1SB52-103-(0-0.5)	Lithium	12.7	mg/kg		none
SG1SB52-103-(0-0.5)	Manganese	311	mg/kg		none
SG1SB52-103-(0-0.5)	Mercury	0.041	mg/kg		none
SG1SB52-103-(0-0.5)	Molybdenum	0.068	mg/kg	U	none
SG1SB52-103-(0-0.5)	Nickel	11.4	mg/kg		none
SG1SB52-103-(0-0.5)	Selenium	0.46	mg/kg	U	none
SG1SB52-103-(0-0.5)	Silver	0.052	mg/kg	U	none
SG1SB52-103-(0-0.5)	Strontium	106	mg/kg		none
SG1SB52-103-(0-0.5)	Thallium	0.085	mg/kg	U	none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SG1SB52-103-(0-0.5)	Tin	0.49	mg/kg	U	none
SG1SB52-103-(0-0.5)	Titanium	19.8	mg/kg		none
SG1SB52-103-(0-0.5)	Vanadium	18.8	mg/kg		none
SG1SB52-103-(0-0.5)	Zinc	195	mg/kg		J
SG2SB53-105-(0-0.5)	Aluminum	5970	mg/kg		none
SG2SB53-105-(0-0.5)	Antimony	2.97	mg/kg	B	J
SG2SB53-105-(0-0.5)	Arsenic	1.44	mg/kg	B	U
SG2SB53-105-(0-0.5)	Barium	110	mg/kg		none
SG2SB53-105-(0-0.5)	Beryllium	4.6	mg/kg		none
SG2SB53-105-(0-0.5)	Boron	1.99	mg/kg	U	none
SG2SB53-105-(0-0.5)	Cadmium	0.11	mg/kg	B	J
SG2SB53-105-(0-0.5)	Chromium	8.29	mg/kg		none
SG2SB53-105-(0-0.5)	Cobalt	2.28	mg/kg		none
SG2SB53-105-(0-0.5)	Copper	6.89	mg/kg		none
SG2SB53-105-(0-0.5)	Iron	8490	mg/kg		none
SG2SB53-105-(0-0.5)	Lead	13.1	mg/kg		none
SG2SB53-105-(0-0.5)	Lithium	6.44	mg/kg		none
SG2SB53-105-(0-0.5)	Manganese	217	mg/kg		none
SG2SB53-105-(0-0.5)	Mercury	0.018	mg/kg		none
SG2SB53-105-(0-0.5)	Molybdenum	0.91	mg/kg	B	J
SG2SB53-105-(0-0.5)	Nickel	7.27	mg/kg		none
SG2SB53-105-(0-0.5)	Selenium	0.95	mg/kg	B	U
SG2SB53-105-(0-0.5)	Silver	0.86	mg/kg		U
SG2SB53-105-(0-0.5)	Strontium	288	mg/kg		none
SG2SB53-105-(0-0.5)	Thallium	0.16	mg/kg	U	none
SG2SB53-105-(0-0.5)	Tin	0.95	mg/kg	U	none
SG2SB53-105-(0-0.5)	Titanium	61	mg/kg		none
SG2SB53-105-(0-0.5)	Vanadium	13.8	mg/kg		none
SG2SB53-105-(0-0.5)	Zinc	355	mg/kg		J
SG2SB54-107 -(0-0.5)	Aluminum	2120	mg/kg		J
SG2SB54-107 -(0-0.5)	Antimony	1.13	mg/kg	B	J
SG2SB54-107 -(0-0.5)	Arsenic	1.17	mg/kg	B	J
SG2SB54-107 -(0-0.5)	Barium	209	mg/kg		none
SG2SB54-107 -(0-0.5)	Beryllium	0.28	mg/kg		none
SG2SB54-107 -(0-0.5)	Boron	1.05	mg/kg	U	none
SG2SB54-107 -(0-0.5)	Cadmium	0.47	mg/kg		none
SG2SB54-107 -(0-0.5)	Chromium	8.71	mg/kg		none
SG2SB54-107 -(0-0.5)	Cobalt	1.6	mg/kg		none
SG2SB54-107 -(0-0.5)	Copper	11.4	mg/kg		none
SG2SB54-107 -(0-0.5)	Iron	9510	mg/kg		none
SG2SB54-107 -(0-0.5)	Lead	27.3	mg/kg		J
SG2SB54-107 -(0-0.5)	Lithium	2.19	mg/kg	B	J
SG2SB54-107 -(0-0.5)	Manganese	114	mg/kg		none
SG2SB54-107 -(0-0.5)	Mercury	0.018	mg/kg		none
SG2SB54-107 -(0-0.5)	Molybdenum	1	mg/kg	B	J
SG2SB54-107 -(0-0.5)	Nickel	5.63	mg/kg		none
SG2SB54-107 -(0-0.5)	Selenium	0.47	mg/kg	U	none
SG2SB54-107 -(0-0.5)	Silver	0.053	mg/kg	U	none
SG2SB54-107 -(0-0.5)	Strontium	42.7	mg/kg		J
SG2SB54-107 -(0-0.5)	Thallium	0.086	mg/kg	U	none
SG2SB54-107 -(0-0.5)	Tin	0.5	mg/kg	U	none
SG2SB54-107 -(0-0.5)	Titanium	51.3	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SG2SB54-107 -(0-0.5)	Vanadium	9.82	mg/kg		none
SG2SB54-107 -(0-0.5)	Zinc	878	mg/kg		J
SG3SB55-109 -(0-0.5)	Aluminum	9560	mg/kg		J
SG3SB55-109 -(0-0.5)	Antimony	2.84	mg/kg		J-
SG3SB55-109 -(0-0.5)	Arsenic	1.94	mg/kg		none
SG3SB55-109 -(0-0.5)	Barium	141	mg/kg		none
SG3SB55-109 -(0-0.5)	Beryllium	0.62	mg/kg		none
SG3SB55-109 -(0-0.5)	Boron	1.11	mg/kg	U	UJ
SG3SB55-109 -(0-0.5)	Cadmium	0.43	mg/kg		none
SG3SB55-109 -(0-0.5)	Chromium	11	mg/kg		none
SG3SB55-109 -(0-0.5)	Cobalt	4.75	mg/kg		none
SG3SB55-109 -(0-0.5)	Copper	10.2	mg/kg		none
SG3SB55-109 -(0-0.5)	Iron	14400	mg/kg		none
SG3SB55-109 -(0-0.5)	Lead	43	mg/kg		J
SG3SB55-109 -(0-0.5)	Lithium	13.5	mg/kg		none
SG3SB55-109 -(0-0.5)	Manganese	247	mg/kg		none
SG3SB55-109 -(0-0.5)	Mercury	0.014	mg/kg		U
SG3SB55-109 -(0-0.5)	Molybdenum	0.073	mg/kg	U	UJ
SG3SB55-109 -(0-0.5)	Nickel	13.3	mg/kg		none
SG3SB55-109 -(0-0.5)	Selenium	0.5	mg/kg	U	none
SG3SB55-109 -(0-0.5)	Silver	0.055	mg/kg	U	none
SG3SB55-109 -(0-0.5)	Strontium	67.2	mg/kg		J
SG3SB55-109 -(0-0.5)	Thallium	0.091	mg/kg	U	none
SG3SB55-109 -(0-0.5)	Tin	0.53	mg/kg	U	none
SG3SB55-109 -(0-0.5)	Titanium	27.1	mg/kg		none
SG3SB55-109 -(0-0.5)	Vanadium	18.4	mg/kg		none
SG3SB55-109 -(0-0.5)	Zinc	455	mg/kg		J
SG4SB56-111-(0-0.5)	Aluminum	2930	mg/kg		J
SG4SB56-111-(0-0.5)	Antimony	0.21	mg/kg	U	R
SG4SB56-111-(0-0.5)	Arsenic	5.31	mg/kg		none
SG4SB56-111-(0-0.5)	Barium	556	mg/kg		none
SG4SB56-111-(0-0.5)	Beryllium	0.2	mg/kg	B	J
SG4SB56-111-(0-0.5)	Boron	1.01	mg/kg	U	UJ
SG4SB56-111-(0-0.5)	Cadmium	0.49	mg/kg		none
SG4SB56-111-(0-0.5)	Chromium	9.97	mg/kg		none
SG4SB56-111-(0-0.5)	Cobalt	1.22	mg/kg		none
SG4SB56-111-(0-0.5)	Copper	26.5	mg/kg		none
SG4SB56-111-(0-0.5)	Iron	9850	mg/kg		none
SG4SB56-111-(0-0.5)	Lead	50.4	mg/kg		J
SG4SB56-111-(0-0.5)	Lithium	3.22	mg/kg		none
SG4SB56-111-(0-0.5)	Manganese	194	mg/kg		none
SG4SB56-111-(0-0.5)	Mercury	0.022	mg/kg		none
SG4SB56-111-(0-0.5)	Molybdenum	0.89	mg/kg	B	J
SG4SB56-111-(0-0.5)	Nickel	7.51	mg/kg		none
SG4SB56-111-(0-0.5)	Selenium	0.46	mg/kg	U	none
SG4SB56-111-(0-0.5)	Silver	0.051	mg/kg	U	none
SG4SB56-111-(0-0.5)	Strontium	82.8	mg/kg		J
SG4SB56-111-(0-0.5)	Thallium	0.083	mg/kg	U	none
SG4SB56-111-(0-0.5)	Tin	0.48	mg/kg	U	none
SG4SB56-111-(0-0.5)	Titanium	30.1	mg/kg		none
SG4SB56-111-(0-0.5)	Vanadium	10.5	mg/kg		none
SG4SB56-111-(0-0.5)	Zinc	607	mg/kg		J

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SG5SB57-113-(0-0.5)	Aluminum	4910	mg/kg		J
SG5SB57-113-(0-0.5)	Antimony	0.23	mg/kg	U	R
SG5SB57-113-(0-0.5)	Arsenic	4.42	mg/kg		none
SG5SB57-113-(0-0.5)	Barium	448	mg/kg		none
SG5SB57-113-(0-0.5)	Beryllium	0.35	mg/kg		none
SG5SB57-113-(0-0.5)	Boron	9.19	mg/kg		J-
SG5SB57-113-(0-0.5)	Cadmium	0.019	mg/kg	U	none
SG5SB57-113-(0-0.5)	Chromium	13.6	mg/kg		none
SG5SB57-113-(0-0.5)	Cobalt	4.19	mg/kg		none
SG5SB57-113-(0-0.5)	Copper	18.3	mg/kg		none
SG5SB57-113-(0-0.5)	Iron	15700	mg/kg		none
SG5SB57-113-(0-0.5)	Lead	27.7	mg/kg		J
SG5SB57-113-(0-0.5)	Lithium	8.24	mg/kg		none
SG5SB57-113-(0-0.5)	Manganese	250	mg/kg		J
SG5SB57-113-(0-0.5)	Mercury	0.012	mg/kg		none
SG5SB57-113-(0-0.5)	Molybdenum	2.73	mg/kg		none
SG5SB57-113-(0-0.5)	Nickel	12.1	mg/kg		none
SG5SB57-113-(0-0.5)	Selenium	0.5	mg/kg	U	none
SG5SB57-113-(0-0.5)	Silver	0.056	mg/kg	U	none
SG5SB57-113-(0-0.5)	Strontium	46.5	mg/kg		J
SG5SB57-113-(0-0.5)	Thallium	0.091	mg/kg	U	none
SG5SB57-113-(0-0.5)	Tin	0.53	mg/kg	U	none
SG5SB57-113-(0-0.5)	Titanium	16.7	mg/kg		none
SG5SB57-113-(0-0.5)	Vanadium	12.7	mg/kg		none
SG5SB57-113-(0-0.5)	Zinc	249	mg/kg		J
SG5SB58-115-(0-0.5)	Aluminum	15200	mg/kg		J
SG5SB58-115-(0-0.5)	Antimony	0.21	mg/kg	U	UJ
SG5SB58-115-(0-0.5)	Arsenic	4.31	mg/kg		none
SG5SB58-115-(0-0.5)	Barium	826	mg/kg		none
SG5SB58-115-(0-0.5)	Beryllium	0.78	mg/kg		none
SG5SB58-115-(0-0.5)	Boron	54.4	mg/kg		none
SG5SB58-115-(0-0.5)	Cadmium	0.018	mg/kg	U	none
SG5SB58-115-(0-0.5)	Chromium	15.3	mg/kg		none
SG5SB58-115-(0-0.5)	Cobalt	16	mg/kg		none
SG5SB58-115-(0-0.5)	Copper	31.4	mg/kg		none
SG5SB58-115-(0-0.5)	Iron	10300	mg/kg		J
SG5SB58-115-(0-0.5)	Lead	12.8	mg/kg		J
SG5SB58-115-(0-0.5)	Lithium	10.9	mg/kg		none
SG5SB58-115-(0-0.5)	Manganese	225	mg/kg		none
SG5SB58-115-(0-0.5)	Mercury	0.66	mg/kg		none
SG5SB58-115-(0-0.5)	Molybdenum	8.42	mg/kg		none
SG5SB58-115-(0-0.5)	Nickel	19.4	mg/kg		none
SG5SB58-115-(0-0.5)	Selenium	0.47	mg/kg	U	none
SG5SB58-115-(0-0.5)	Silver	0.052	mg/kg	U	none
SG5SB58-115-(0-0.5)	Strontium	527	mg/kg		J
SG5SB58-115-(0-0.5)	Thallium	0.91	mg/kg		none
SG5SB58-115-(0-0.5)	Tin	0.5	mg/kg	U	none
SG5SB58-115-(0-0.5)	Titanium	645	mg/kg		none
SG5SB58-115-(0-0.5)	Vanadium	45.6	mg/kg		none
SG5SB58-115-(0-0.5)	Zinc	115	mg/kg		J
SG6SB59-117-(0-0.5)	Aluminum	5860	mg/kg		J
SG6SB59-117-(0-0.5)	Antimony	0.21	mg/kg	U	UJ

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SG6SB59-117-(0-0.5)	Arsenic	3.69	mg/kg		none
SG6SB59-117-(0-0.5)	Barium	769	mg/kg		none
SG6SB59-117-(0-0.5)	Beryllium	0.33	mg/kg		none
SG6SB59-117-(0-0.5)	Boron	9.53	mg/kg		none
SG6SB59-117-(0-0.5)	Cadmium	0.018	mg/kg	U	none
SG6SB59-117-(0-0.5)	Chromium	18.1	mg/kg		none
SG6SB59-117-(0-0.5)	Cobalt	4.09	mg/kg		none
SG6SB59-117-(0-0.5)	Copper	18.1	mg/kg		none
SG6SB59-117-(0-0.5)	Iron	14400	mg/kg		J
SG6SB59-117-(0-0.5)	Lead	44.2	mg/kg		J
SG6SB59-117-(0-0.5)	Lithium	10.3	mg/kg		none
SG6SB59-117-(0-0.5)	Manganese	278	mg/kg		none
SG6SB59-117-(0-0.5)	Mercury	0.0024	mg/kg	B	U
SG6SB59-117-(0-0.5)	Molybdenum	0.98	mg/kg	B	J
SG6SB59-117-(0-0.5)	Nickel	11.1	mg/kg		none
SG6SB59-117-(0-0.5)	Selenium	0.46	mg/kg	U	none
SG6SB59-117-(0-0.5)	Silver	0.051	mg/kg	U	none
SG6SB59-117-(0-0.5)	Strontium	86.3	mg/kg		J
SG6SB59-117-(0-0.5)	Thallium	0.084	mg/kg	U	none
SG6SB59-117-(0-0.5)	Tin	0.49	mg/kg	U	none
SG6SB59-117-(0-0.5)	Titanium	15.7	mg/kg		none
SG6SB59-117-(0-0.5)	Vanadium	13.3	mg/kg		none
SG6SB59-117-(0-0.5)	Zinc	314	mg/kg		J
SG7SB60-119-(0-0.5)	Aluminum	7610	mg/kg		J
SG7SB60-119-(0-0.5)	Antimony	1.15	mg/kg	B	J
SG7SB60-119-(0-0.5)	Arsenic	0.28	mg/kg	B	J
SG7SB60-119-(0-0.5)	Barium	113	mg/kg		none
SG7SB60-119-(0-0.5)	Beryllium	0.53	mg/kg		none
SG7SB60-119-(0-0.5)	Boron	1.03	mg/kg	U	none
SG7SB60-119-(0-0.5)	Cadmium	0.27	mg/kg		none
SG7SB60-119-(0-0.5)	Chromium	7.42	mg/kg		none
SG7SB60-119-(0-0.5)	Cobalt	4.19	mg/kg		none
SG7SB60-119-(0-0.5)	Copper	8.65	mg/kg		none
SG7SB60-119-(0-0.5)	Iron	10800	mg/kg		none
SG7SB60-119-(0-0.5)	Lead	12	mg/kg		J
SG7SB60-119-(0-0.5)	Lithium	11.1	mg/kg		none
SG7SB60-119-(0-0.5)	Manganese	200	mg/kg		none
SG7SB60-119-(0-0.5)	Mercury	0.011	mg/kg		U
SG7SB60-119-(0-0.5)	Molybdenum	0.068	mg/kg	U	none
SG7SB60-119-(0-0.5)	Nickel	10.2	mg/kg		none
SG7SB60-119-(0-0.5)	Selenium	0.46	mg/kg	U	none
SG7SB60-119-(0-0.5)	Silver	0.052	mg/kg	U	none
SG7SB60-119-(0-0.5)	Strontium	58.1	mg/kg		J
SG7SB60-119-(0-0.5)	Thallium	0.084	mg/kg	U	none
SG7SB60-119-(0-0.5)	Tin	0.49	mg/kg	U	none
SG7SB60-119-(0-0.5)	Titanium	17.7	mg/kg		none
SG7SB60-119-(0-0.5)	Vanadium	14.5	mg/kg		none
SG7SB60-119-(0-0.5)	Zinc	91.7	mg/kg		J
SH1SB61-121-(0-0.5)	Aluminum	7330	mg/kg		none
SH1SB61-121-(0-0.5)	Antimony	2.31	mg/kg	B	J
SH1SB61-121-(0-0.5)	Arsenic	1.69	mg/kg	B	J
SH1SB61-121-(0-0.5)	Barium	206	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SH1SB61-121-(0-0.5)	Beryllium	0.53	mg/kg		none
SH1SB61-121-(0-0.5)	Boron	1.11	mg/kg	U	none
SH1SB61-121-(0-0.5)	Cadmium	0.3	mg/kg		none
SH1SB61-121-(0-0.5)	Chromium	8.55	mg/kg		none
SH1SB61-121-(0-0.5)	Cobalt	4.82	mg/kg		none
SH1SB61-121-(0-0.5)	Copper	9.73	mg/kg		none
SH1SB61-121-(0-0.5)	Iron	10800	mg/kg		none
SH1SB61-121-(0-0.5)	Lead	17.4	mg/kg		none
SH1SB61-121-(0-0.5)	Lithium	11.4	mg/kg		none
SH1SB61-121-(0-0.5)	Manganese	413	mg/kg		none
SH1SB61-121-(0-0.5)	Mercury	0.0024	mg/kg	U	none
SH1SB61-121-(0-0.5)	Molybdenum	0.38	mg/kg	B	J
SH1SB61-121-(0-0.5)	Nickel	10.8	mg/kg		none
SH1SB61-121-(0-0.5)	Selenium	0.5	mg/kg	U	none
SH1SB61-121-(0-0.5)	Silver	0.3	mg/kg	B	U
SH1SB61-121-(0-0.5)	Strontium	87.6	mg/kg		none
SH1SB61-121-(0-0.5)	Thallium	0.091	mg/kg	U	none
SH1SB61-121-(0-0.5)	Tin	0.53	mg/kg	U	none
SH1SB61-121-(0-0.5)	Titanium	18.9	mg/kg		none
SH1SB61-121-(0-0.5)	Vanadium	18.1	mg/kg		none
SH1SB61-121-(0-0.5)	Zinc	481	mg/kg		J
SH2SB62-123 -(0-0.5)	Aluminum	9740	mg/kg		J
SH2SB62-123 -(0-0.5)	Antimony	1.91	mg/kg	B	J
SH2SB62-123 -(0-0.5)	Arsenic	0.26	mg/kg	B	J
SH2SB62-123 -(0-0.5)	Barium	102	mg/kg		none
SH2SB62-123 -(0-0.5)	Beryllium	0.72	mg/kg		none
SH2SB62-123 -(0-0.5)	Boron	1.11	mg/kg	U	none
SH2SB62-123 -(0-0.5)	Cadmium	0.27	mg/kg		none
SH2SB62-123 -(0-0.5)	Chromium	9.05	mg/kg		none
SH2SB62-123 -(0-0.5)	Cobalt	5.84	mg/kg		none
SH2SB62-123 -(0-0.5)	Copper	10.7	mg/kg		none
SH2SB62-123 -(0-0.5)	Iron	13600	mg/kg		none
SH2SB62-123 -(0-0.5)	Lead	13.8	mg/kg		J
SH2SB62-123 -(0-0.5)	Lithium	15.8	mg/kg		none
SH2SB62-123 -(0-0.5)	Manganese	235	mg/kg		none
SH2SB62-123 -(0-0.5)	Mercury	0.0089	mg/kg	B	U
SH2SB62-123 -(0-0.5)	Molybdenum	0.073	mg/kg	U	none
SH2SB62-123 -(0-0.5)	Nickel	14.1	mg/kg		none
SH2SB62-123 -(0-0.5)	Selenium	0.5	mg/kg	U	none
SH2SB62-123 -(0-0.5)	Silver	0.055	mg/kg	U	none
SH2SB62-123 -(0-0.5)	Strontium	69.8	mg/kg		J
SH2SB62-123 -(0-0.5)	Thallium	0.091	mg/kg	U	none
SH2SB62-123 -(0-0.5)	Tin	0.53	mg/kg	U	none
SH2SB62-123 -(0-0.5)	Titanium	24.7	mg/kg		none
SH2SB62-123 -(0-0.5)	Vanadium	21	mg/kg		none
SH2SB62-123 -(0-0.5)	Zinc	36.2	mg/kg		J
SH3SB63-125 -(0-0.5)	Aluminum	4360	mg/kg		J
SH3SB63-125 -(0-0.5)	Antimony	1.16	mg/kg	B	J
SH3SB63-125 -(0-0.5)	Arsenic	0.18	mg/kg	U	none
SH3SB63-125 -(0-0.5)	Barium	385	mg/kg		none
SH3SB63-125 -(0-0.5)	Beryllium	0.31	mg/kg		none
SH3SB63-125 -(0-0.5)	Boron	1.05	mg/kg	U	none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SH3SB63-125 -(0-0.5)	Cadmium	0.64	mg/kg		none
SH3SB63-125 -(0-0.5)	Chromium	9.84	mg/kg		none
SH3SB63-125 -(0-0.5)	Cobalt	3.47	mg/kg		none
SH3SB63-125 -(0-0.5)	Copper	19.3	mg/kg		none
SH3SB63-125 -(0-0.5)	Iron	17400	mg/kg		none
SH3SB63-125 -(0-0.5)	Lead	34.4	mg/kg		J
SH3SB63-125 -(0-0.5)	Lithium	6.5	mg/kg		none
SH3SB63-125 -(0-0.5)	Manganese	270	mg/kg		none
SH3SB63-125 -(0-0.5)	Mercury	0.027	mg/kg		none
SH3SB63-125 -(0-0.5)	Molybdenum	0.69	mg/kg	B	J
SH3SB63-125 -(0-0.5)	Nickel	11.2	mg/kg		none
SH3SB63-125 -(0-0.5)	Selenium	0.47	mg/kg	U	none
SH3SB63-125 -(0-0.5)	Silver	0.053	mg/kg	U	none
SH3SB63-125 -(0-0.5)	Strontium	73.5	mg/kg		J
SH3SB63-125 -(0-0.5)	Thallium	0.086	mg/kg	U	none
SH3SB63-125 -(0-0.5)	Tin	0.58	mg/kg	B	J
SH3SB63-125 -(0-0.5)	Titanium	21.6	mg/kg		none
SH3SB63-125 -(0-0.5)	Vanadium	12.9	mg/kg		none
SH3SB63-125 -(0-0.5)	Zinc	722	mg/kg		J
SH4SB64-127-(0-0.5)	Aluminum	4720	mg/kg		J
SH4SB64-127-(0-0.5)	Antimony	2.93	mg/kg		J-
SH4SB64-127-(0-0.5)	Arsenic	6.89	mg/kg		none
SH4SB64-127-(0-0.5)	Barium	567	mg/kg		none
SH4SB64-127-(0-0.5)	Beryllium	0.31	mg/kg		none
SH4SB64-127-(0-0.5)	Boron	1.09	mg/kg	U	UJ
SH4SB64-127-(0-0.5)	Cadmium	0.48	mg/kg		none
SH4SB64-127-(0-0.5)	Chromium	136	mg/kg		none
SH4SB64-127-(0-0.5)	Cobalt	2.53	mg/kg		none
SH4SB64-127-(0-0.5)	Copper	14.2	mg/kg		none
SH4SB64-127-(0-0.5)	Iron	12800	mg/kg		none
SH4SB64-127-(0-0.5)	Lead	643	mg/kg		J
SH4SB64-127-(0-0.5)	Lithium	6.27	mg/kg		none
SH4SB64-127-(0-0.5)	Manganese	195	mg/kg		none
SH4SB64-127-(0-0.5)	Mercury	0.027	mg/kg		none
SH4SB64-127-(0-0.5)	Molybdenum	1.33	mg/kg	B	J
SH4SB64-127-(0-0.5)	Nickel	10.5	mg/kg		none
SH4SB64-127-(0-0.5)	Selenium	0.49	mg/kg	U	none
SH4SB64-127-(0-0.5)	Silver	0.055	mg/kg	U	none
SH4SB64-127-(0-0.5)	Strontium	49.5	mg/kg		J
SH4SB64-127-(0-0.5)	Thallium	0.089	mg/kg	U	none
SH4SB64-127-(0-0.5)	Tin	0.52	mg/kg	U	none
SH4SB64-127-(0-0.5)	Titanium	18.9	mg/kg		none
SH4SB64-127-(0-0.5)	Vanadium	13.4	mg/kg		none
SH4SB64-127-(0-0.5)	Zinc	850	mg/kg		J
SH5SB66-131-(0-0.5)	Aluminum	4460	mg/kg		J
SH5SB66-131-(0-0.5)	Antimony	0.21	mg/kg	U	R
SH5SB66-131-(0-0.5)	Arsenic	7.19	mg/kg		none
SH5SB66-131-(0-0.5)	Barium	793	mg/kg		none
SH5SB66-131-(0-0.5)	Beryllium	0.21	mg/kg	B	J
SH5SB66-131-(0-0.5)	Boron	1	mg/kg	U	UJ
SH5SB66-131-(0-0.5)	Cadmium	0.79	mg/kg		none
SH5SB66-131-(0-0.5)	Chromium	9.31	mg/kg		none

South Grids A-H  
Metal Concentrations  
Soil Borings (0-0.5') and Surface Soils (0-1")

Sample ID	Parameter	Result	Unit	Lab Qualifier	Valid Qualifier
SH5SB66-131-(0-0.5)	Cobalt	1.33	mg/kg		none
SH5SB66-131-(0-0.5)	Copper	29.7	mg/kg		none
SH5SB66-131-(0-0.5)	Iron	19800	mg/kg		none
SH5SB66-131-(0-0.5)	Lead	25.1	mg/kg		J
SH5SB66-131-(0-0.5)	Lithium	4.2	mg/kg		none
SH5SB66-131-(0-0.5)	Manganese	412	mg/kg		none
SH5SB66-131-(0-0.5)	Mercury	0.0082	mg/kg	B	U
SH5SB66-131-(0-0.5)	Molybdenum	0.91	mg/kg	B	J
SH5SB66-131-(0-0.5)	Nickel	10.3	mg/kg		none
SH5SB66-131-(0-0.5)	Selenium	0.45	mg/kg	U	none
SH5SB66-131-(0-0.5)	Silver	0.05	mg/kg	U	none
SH5SB66-131-(0-0.5)	Strontium	69.3	mg/kg		J
SH5SB66-131-(0-0.5)	Thallium	0.082	mg/kg	U	none
SH5SB66-131-(0-0.5)	Tin	0.48	mg/kg	U	none
SH5SB66-131-(0-0.5)	Titanium	13.6	mg/kg		none
SH5SB66-131-(0-0.5)	Vanadium	14.9	mg/kg		none
SH5SB66-131-(0-0.5)	Zinc	803	mg/kg		J
SH6SB67-133-(0-0.5)	Aluminum	1140	mg/kg		J
SH6SB67-133-(0-0.5)	Antimony	0.2	mg/kg	U	UJ
SH6SB67-133-(0-0.5)	Arsenic	11	mg/kg		none
SH6SB67-133-(0-0.5)	Barium	73.8	mg/kg		none
SH6SB67-133-(0-0.5)	Beryllium	0.0031	mg/kg	U	none
SH6SB67-133-(0-0.5)	Boron	0.97	mg/kg	U	none
SH6SB67-133-(0-0.5)	Cadmium	1.23	mg/kg		none
SH6SB67-133-(0-0.5)	Chromium	21.2	mg/kg		none
SH6SB67-133-(0-0.5)	Cobalt	3.1	mg/kg		none
SH6SB67-133-(0-0.5)	Copper	31.3	mg/kg		none
SH6SB67-133-(0-0.5)	Iron	32600	mg/kg		none
SH6SB67-133-(0-0.5)	Lead	134	mg/kg		J
SH6SB67-133-(0-0.5)	Lithium	1.19	mg/kg	B	J
SH6SB67-133-(0-0.5)	Manganese	259	mg/kg		none
SH6SB67-133-(0-0.5)	Mercury	0.02	mg/kg		none
SH6SB67-133-(0-0.5)	Molybdenum	3.5	mg/kg		none
SH6SB67-133-(0-0.5)	Nickel	14.6	mg/kg		none
SH6SB67-133-(0-0.5)	Selenium	0.44	mg/kg	U	none
SH6SB67-133-(0-0.5)	Silver	0.049	mg/kg	U	none
SH6SB67-133-(0-0.5)	Strontium	20	mg/kg		J
SH6SB67-133-(0-0.5)	Thallium	0.08	mg/kg	U	none
SH6SB67-133-(0-0.5)	Tin	0.59	mg/kg	B	J
SH6SB67-133-(0-0.5)	Titanium	13.8	mg/kg		none
SH6SB67-133-(0-0.5)	Vanadium	10.5	mg/kg		none
SH6SB67-133-(0-0.5)	Zinc	470	mg/kg		J

Notes:

Data Qualifiers: U = Not Detected; B = Estimated Value (Lab); J = Estimated Value (Validator), J- = Estimated Value, Biased Low, UJ = Undetected, Estimated Detection Limit, R = Rejected.

**APPENDIX C**  
**BACKGROUND SOIL DATA**

Gulfco Marine Maintenance  
 Background Soil Samples  
 Arsenic and Lead Concentrations

Sample ID	Parameter	Result	Unit	Valid Qualifier
BSS-1	Arsenic	3.72	mg/kg	none
BSS-2	Arsenic	4.53	mg/kg	none
BSS-3	Arsenic	5.9	mg/kg	none
BSS-4	Arsenic	5.73	mg/kg	none
BSS-5	Arsenic	3.53	mg/kg	none
BSS-6	Arsenic	1.75	mg/kg	J
BSS-7	Arsenic	1.69	mg/kg	J
BSS-8	Arsenic	0.24	mg/kg	none
BSS-9	Arsenic	3.45	mg/kg	none
BSS-10	Arsenic	3.84	mg/kg	none
BSS-1	Lead	13.1	mg/kg	none
BSS-2	Lead	15.2	mg/kg	none
BSS-3	Lead	15.2	mg/kg	none
BSS-4	Lead	11.3	mg/kg	none
BSS-5	Lead	11	mg/kg	none
BSS-6	Lead	13.6	mg/kg	none
BSS-7	Lead	12.6	mg/kg	none
BSS-8	Lead	15	mg/kg	none
BSS-9	Lead	12.8	mg/kg	none
BSS-10	Lead	14.5	mg/kg	none

Notes:

Data Qualifiers: J = Estimated Value.

**APPENDIX D**  
**SUMMARY STATISTICS**  
**(Output from EPA's PROUCL software package)**

General Statistics

Arsenic - Lots 21-23 surface soil			
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	63	Lilliefors Test Statistic	0.157639
Number of Unique Samples	57	Lilliefors 5% Critical Value	0.111626
Minimum	0.16	Data not normal at 5% significance level	
Maximum	17.6		
Mean	3.757778	95% UCL (Assuming Normal Distribution)	
Median	2.81	Student's-t UCL	4.511489
Standard Deviation	3.582695		
Variance	12.8357	Gamma Distribution Test	
Coefficient of Variation	0.953408	A-D Test Statistic	0.795799
Skewness	1.495974	A-D 5% Critical Value	0.782522
		K-S Test Statistic	0.109313
		K-S 5% Critical Value	0.115744
k hat	0.941242	Data follow approximate gamma distribution	
k star (bias corrected)	0.907003	at 5% significance level	
Theta hat	3.992362		
Theta star	4.143072	95% UCLs (Assuming Gamma Distribution)	
nu hat	118.5965	Approximate Gamma UCL	4.740143
nu star	114.2823	Adjusted Gamma UCL	4.766043
Approx.Chi Square Value (.05)	90.59803		
Adjusted Level of Significance	0.04619	Lognormal Distribution Test	
Adjusted Chi Square Value	90.10569	Lilliefors Test Statistic	0.141934
		Lilliefors 5% Critical Value	0.111626
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.832581		
Maximum of log data	2.867899	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	0.706131	95% H-UCL	7.630384
Standard Deviation of log data	1.329391	95% Chebyshev (MVUE) UCL	9.292817
Variance of log data	1.767281	97.5% Chebyshev (MVUE) UCL	11.24575
		99% Chebyshev (MVUE) UCL	15.08192
		95% Non-parametric UCLs	
		CLT UCL	4.500227
		Adj-CLT UCL (Adjusted for skewness)	4.591129
		Mod-t UCL (Adjusted for skewness)	4.525668
		Jackknife UCL	4.511489
		Standard Bootstrap UCL	4.478431
		Bootstrap-t UCL	4.636147
RECOMMENDATION		Hall's Bootstrap UCL	4.638162
Assuming gamma distribution (0.05)		Percentile Bootstrap UCL	4.549206
		BCA Bootstrap UCL	4.90746
		95% Chebyshev (Mean, Sd) UCL	5.725285
		97.5% Chebyshev (Mean, Sd) UCL	6.576627
		99% Chebyshev (Mean, Sd) UCL	8.248924

## General Statistics

Arsenic - Background			
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	10	Shapiro-Wilk Test Statistic	0.946233
Number of Unique Samples	10	Shapiro-Wilk 5% Critical Value	0.842
Minimum	0.24	Data are normal at 5% significance level	
Maximum	5.9		
Mean	3.438	95% UCL (Assuming Normal Distribution)	
Median	3.625	Student	4.476565
Standard Deviation	1.791615		
Variance	3.209884	Gamma Distribution Test	
Coefficient of Variation	0.521121	A-D Test Statistic	0.699325
Skewness	-0.350266	A-D 5% Critical Value	0.735068
		K-S Test Statistic	0.292624
Gamma Statistics		K-S 5% Critical Value	0.269605
k hat	2.150708	Data follow approximate gamma distribution	
k star (bias corrected)	1.572162	at 5% significance level	
Theta hat	1.598543		
Theta star	2.186797	95% UCLs (Assuming Gamma Distribution)	
nu hat	43.01416	Approximate Gamma UCL	5.50726
nu star	31.44325	Adjusted Gamma UCL	5.998075
Approx.Chi Square Value (.05)	19.62898		
Adjusted Level of Significance	0.0267	Lognormal Distribution Test	
Adjusted Chi Square Value	18.02276	Shapiro-Wilk Test Statistic	0.748985
		Shapiro-Wilk 5% Critical Value	0.842
Log-transformed Statistics		Data not lognormal at 5% significance level	
Minimum of log data	-1.427116		
Maximum of log data	1.774952	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	0.984749	95% H-UCL	10.78656
Standard Deviation of log data	0.946851	95% Chebyshev (MVUE) UCL	9.349393
Variance of log data	0.896527	97.5% Chebyshev (MVUE) UCL	11.68438
		99% Chebyshev (MVUE) UCL	16.271
		95% Non-parametric UCLs	
		CLT UCL	4.369906
		Adj-CLT UCL (Adjusted for skewness)	4.302852
		Mod-t UCL (Adjusted for skewness)	4.466106
		Jackknife UCL	4.476565
		Standard Bootstrap UCL	4.327573
		Bootstrap-t UCL	4.3869
RECOMMENDATION		Hall's Bootstrap UCL	4.341061
Data are normal (0.05)		Percentile Bootstrap UCL	4.293
		BCA Bootstrap UCL	4.519
		95% Chebyshev (Mean, Sd) UCL	5.907571
		97.5% Chebyshev (Mean, Sd) UCL	6.976156
		99% Chebyshev (Mean, Sd) UCL	9.075185

### General Statistics

Lead - Lots 21-23 surface soil			
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	63	Lilliefors Test Statistic	0.258321
Number of Unique Samples	61	Lilliefors 5% Critical Value	0.111626
Minimum	2.82	Data not normal at 5% significance level	
Maximum	643		
Mean	96.3754	95% UCL (Assuming Normal Distribution)	
Median	49.1	Student's-t UCL	124.9394
Standard Deviation	135.7763		
Variance	18435.19	Gamma Distribution Test	
Coefficient of Variation	1.408827	A-D Test Statistic	1.983828
Skewness	2.615041	A-D 5% Critical Value	0.785963
		K-S Test Statistic	0.145681
Gamma Statistics		K-S 5% Critical Value	0.116073
k hat	0.873371	Data do not follow gamma distribution	
k star (bias corrected)	0.842364	at 5% significance level	
Theta hat	110.3487		
Theta star	114.4106	95% UCLs (Assuming Gamma Distribution)	
nu hat	110.0448	Approximate Gamma UCL	122.7125
nu star	106.1379	Adjusted Gamma UCL	123.4104
Approx. Chi Square Value (.05)	83.3581		
Adjusted Level of Significance	0.04619	Lognormal Distribution Test	
Adjusted Chi Square Value	82.88666	Lilliefors Test Statistic	0.08363
		Lilliefors 5% Critical Value	0.111626
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	1.036737		
Maximum of log data	6.466145	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	3.896357	95% H-	135.1334
Standard Deviation of log data	1.146699	95% Chebyshev (MVUE) UCL	165.9222
Variance of log data	1.314918	97.5% Chebyshev (MVUE) UCL	197.2981
		99% Chebyshev (MVUE) UCL	258.93
		95% Non-parametric UCLs	
		CLT UCL	124.5126
		Adj-CLT UCL (Adjusted for skewness)	130.5346
		Mod-t UCL (Adjusted for skewness)	125.8787
		Jackknife UCL	124.9394
		Standard Bootstrap UCL	123.9964
		Bootstrap-t UCL	133.47
RECOMMENDATION		Hall's Bootstrap UCL	130.1193
Data are lognormal (0.05)		Percentile Bootstrap UCL	125.7127
		BCA Bootstrap UCL	140.9322
		95% Chebyshev (Mean, Sd) UCL	170.9396
		97.5% Chebyshev (Mean, Sd) UCL	203.2036
		99% Chebyshev (Mean, Sd) UCL	266.58

## General Statistics

Lead - Background			
Raw Statistics		Normal Distribution Test	
Number of Valid Samples	10	Shapiro-Wilk Test Statistic	0.913411
Number of Unique Samples	9	Shapiro-Wilk 5% Critical Value	0.842
Minimum	11	Data are normal at 5% significance level	
Maximum	15.2		
Mean	13.43	95% UCL (Assuming Normal Distribution)	
Median	13.35	Student	14.32681
Standard Deviation	1.547076		
Variance	2.393444	Gamma Distribution Test	
Coefficient of Variation	0.115196	A-D Test Statistic	0.379288
Skewness	-0.325574	A-D 5% Critical Value	0.724052
		K-S Test Statistic	0.169449
		K-S 5% Critical Value	0.265822
Gamma Statistics			
k hat	81.33727	Data follow gamma distribution	
k star (bias corrected)	57.00276	at 5% significance level	
Theta hat	0.165115		
Theta star	0.235603	95% UCLs (Assuming Gamma Distribution)	
nu hat	1626.745	Approximate Gamma UCL	14.40827
nu star	1140.055	Adjusted Gamma UCL	14.58695
Approx. Chi Square Value (.05)	1062.65		
Adjusted Level of Significance	0.0267	Lognormal Distribution Test	
Adjusted Chi Square Value	1049.633	Shapiro-Wilk Test Statistic	0.908584
		Shapiro-Wilk 5% Critical Value	0.842
Log-transformed Statistics		Data are lognormal at 5% significance level	
Minimum of log data	2.397895		
Maximum of log data	2.721295	95% UCLs (Assuming Lognormal Distribution)	
Mean of log data	2.591331	95% H-UCL	14.43473
Standard Deviation of log data	0.117941	95% Chebyshev (MVUE) UCL	15.61729
Variance of log data	0.01391	97.5% Chebyshev (MVUE) UCL	16.56317
		99% Chebyshev (MVUE) UCL	18.42117
		95% Non-parametric UCLs	
		CLT UCL	14.23471
		Adj-CLT UCL (Adjusted for skewness)	14.18089
		Mod-t UCL (Adjusted for skewness)	14.31842
		Jackknife UCL	14.32681
		Standard Bootstrap UCL	14.17463
		Bootstrap-t UCL	14.28099
RECOMMENDATION		Hall's Bootstrap UCL	14.13971
Data are normal (0.05)		Percentile Bootstrap UCL	14.17
		BCA Bootstrap UCL	14.4
		95% Chebyshev (Mean, Sd) UCL	15.5625
		97.5% Chebyshev (Mean, Sd) UCL	16.48523
		99% Chebyshev (Mean, Sd) UCL	18.29776

**APPENDIX E**  
**STATISTICAL TESTING DETAILS**

**Box 3-16: Directions for Satterthwaite's t-Test (Unequal Variances) for Simple and Systematic Random Samples**

This describes the steps for applying the two-sample t-test for differences between the population means for Case 1 ( $H_0: \mu_1 - \mu_2 \leq \delta_0$ ). Modifications for Case 2 ( $H_0: \mu_1 - \mu_2 \geq \delta_0$ ) are given in parentheses {}.

STEP 1: Calculate the sample mean  $\bar{X}$  and the sample variance  $s_x^2$  for sample 1 and compute the sample mean  $\bar{Y}$  and the sample variance  $s_y^2$  for sample 2.

STEP 2: Using Section 4.5, test whether the variances of the two populations are equal. If the variances of the two populations are not equal, compute:

$$s_{NE} = \sqrt{\frac{s_x^2}{m} + \frac{s_y^2}{n}}$$

If the variances of the two populations appear approximately equal, use Student's two-sample t-test (Section 3.3.1.1, Box 3-14).

STEP 3: Calculate  $= \frac{\bar{X} - \bar{Y} - \delta_0}{s_{NE}}$

Use Table A-1 of Appendix A to find the critical value  $t_{1-\alpha}$  such that  $100(1-\alpha)\%$  of the t-distribution with f degrees of freedom is below  $t_{1-\alpha}$ , where

$$f = \frac{\left[ \frac{s_x^2}{m} + \frac{s_y^2}{n} \right]^2}{\frac{s_x^4}{m^2(m-1)} + \frac{s_y^4}{n^2(n-1)}}$$

(Round f down to the nearest integer.)

If  $t > t_{1-\alpha}$  ( $t < -t_{1-\alpha}$ ), the null hypothesis may be rejected. Go to Step 5.

If  $t < t_{1-\alpha}$  ( $t > -t_{1-\alpha}$ ), there is not enough evidence to reject the null hypothesis and therefore, the false acceptance error rate will need to be verified. Go to Step 4.

STEP 4: If the null hypothesis ( $H_0$ ) was not rejected, calculate either the power of the test or the sample size necessary to achieve the false rejection and false acceptance error rates. To calculate the power of the test, assume that the true values for the mean and standard deviation are those obtained in the sample and use a statistical software package to generate the power curve of the two-sample t-test. A simple method to check on statistical power does not exist.

STEP 5: The results of the test could be:

- 1) the null hypothesis was rejected, and it seems  $\mu_1 - \mu_2 > \delta_0$  ( $\mu_1 - \mu_2 < \delta_0$ );
- 2) the null hypothesis was not rejected, the false acceptance error rate was satisfied, and it seems  $\mu_1 - \mu_2 \leq \delta_0$  ( $\mu_1 - \mu_2 \geq \delta_0$ ); or
- 3) the null hypothesis was not rejected, the false acceptance error rate was not satisfied, and it seems  $\mu_1 - \mu_2 \leq \delta_0$  ( $\mu_1 - \mu_2 \geq \delta_0$ ), but this conclusion is uncertain because the sample

**Box 3-17: An Example of Satterthwaite's t-Test (Unequal Variances) for Simple and Systematic Random Samples**

At a hazardous waste site, area 1 (cleaned using an in-situ methodology) was compared with a similar (but relatively uncontaminated) reference area, area 2. If the in-situ methodology worked, then the two sites should be approximately equal in average contaminant levels. If the methodology did not work, then area 1 should have a higher average than the reference area. Seven random samples were taken from area 1, and eight were taken from area 2. Because the contaminant concentrations in the two areas are supposedly equal, the null hypothesis is  $H_0: \mu_1 - \mu_2 \leq 0$  (Case 1). The false rejection error rate was set at 5% and the false acceptance error rate was set at 20% ( $\beta$ ) if the difference between the areas is 2.5 ppb.

STEP 1:	Sample Mean	Sample Variance
Area 1	9.2 ppm	1.3 ppm <sup>2</sup>
Area 2	6.1 ppm	5.7 ppm <sup>2</sup>

STEP 2: Using Section 4.5, it was determined that the variances of the two populations were not equal, and therefore using Satterthwaite's method is appropriate:

$$s_{NE} = \sqrt{1.3/7 + 5.7/8} = 0.9477$$

$$\text{STEP 3: } t = \frac{9.2 - 6.1 - 0}{0.9477} = 3.271$$

Table A-1 was used with f degrees of freedom, where

$$f = \frac{\frac{(1.3/7 + 5.7/8)^2}{1.3^2} - \frac{5.7^2}{8^2(8-1)}}{8^2(8-1)} = 10.307 \text{ (i.e., 10 degrees of freedom)}$$

(recall that f is rounded down to the nearest integer), to find  $t_{1-\alpha} = 1.812$ .

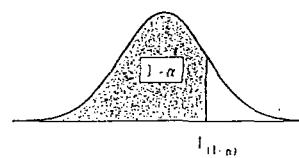
Because  $t > t_{0.95}$  ( $3.271 > 1.812$ ), the null hypothesis may be rejected.

STEP 5: Because the null hypothesis was rejected, it would appear there is a difference between the two areas (area 1 being more contaminated than area 2, the reference area) and that the in-situ methodology has not worked as intended.

### 3.3.2 Comparing Two Proportions or Percentiles

This section considers hypotheses concerning two population proportions (or two population percentiles); for example, one might use these tests to compare the proportion of children with elevated blood lead in one urban area compared with the proportion of children with elevated blood lead in another area. The population proportion is the ratio of the number of elements in a subset of the total population to the total number of elements, where the subset has some specific characteristic that the rest of the elements do not. A population percentile represents the percentage of elements of a population having values less than some threshold value C.

**TABLE A-1: CRITICAL VALUES OF STUDENT'S t DISTRIBUTION**



Degrees of Freedom	1 - $\alpha$								
	.70	.75	.80	.85	.90	.95	.975	.99	.995
1	0.727	1.000	1.376	1.963	3.078	6.314	12.706	31.821	63.657
2	0.617	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925
3	0.584	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841
4	0.569	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604
5	0.559	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032
6	0.553	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707
7	0.549	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499
8	0.546	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355
9	0.543	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250
10	0.542	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169
11	0.540	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106
12	0.539	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055
13	0.538	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012
14	0.537	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977
15	0.536	0.691	0.866	1.074	1.34	1.753	2.131	2.602	2.947
16	0.535	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921
17	0.534	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898
18	0.534	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878
19	0.533	0.6880	0.861	1.066	1.328	1.729	2.093	2.539	2.861
20	0.533	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845
21	0.532	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831
22	0.532	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819
23	0.532	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807
24	0.531	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797
25	0.531	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787
26	0.531	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779
27	0.531	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771
28	0.530	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763
29	0.530	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756
30	0.530	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750
40	0.529	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704
60	0.527	0.679	0.848	1.046	1.296	1.671	2.000	2.390	2.660
120	0.526	0.677	0.845	1.041	1.289	1.658	1.980	2.358	2.617
	0.524	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576

Note: The last row of the table (degrees of freedom) gives the critical values for a standard normal distribution (z), e.g.,  $t_{1-\alpha} = z_{0.95} = 1.645$ .

### Satterthwaite's t-Test for Unequal Variances

#### ARSENIC

##### STEP 1: Calculate mean and variances for site and background data

	Mean	N	Standard Deviation (s)	Variance ( $s^2$ )
Lots 21-23 (X)	3.76	63	3.58	12.84
Background (Y)	3.44	10	1.79	3.21

##### STEP 2: If variances are unequal, compute

$$S_{NE} = \sqrt{(s_x^2/m) + (s_y^2/n)}$$

$$S_{NE} = 0.72$$

##### STEP 3: Calculate

$$t = (\text{mean } X - \text{mean } Y - 0)/S_{NE}$$

$$t = 0.4417$$

Find degrees of freedom (f)

$$f = ((s_x^2/m + s_y^2/n)^2) / (((s_x^2/m^2)(m-1)) + (s_y^2/n^2)(n-1)))$$

$$f = 22.7268$$

round down to nearest integer so f = 22

Use Table A-1 with 22 degrees of freedom to find the critical value  $t_{0.95}$

$$t_{0.95} = 1.717$$

Since calculated t of 0.4417 is less than  $t_{0.95}$  of 1.717, the null hypothesis is accepted which indicates that the populations are statistically similar, and not different.

### Satterthwaite's t-Test for Unequal Variances

#### LEAD

##### STEP 1: Calculate mean and variances for site and background data

	Mean	N	Standard Deviation (s)	Variance ( $s^2$ )
Lots 21-23 (X)	96.38	63	135.78	18435.19
Background (Y)	13.43	10	1.55	2.39

##### STEP 2: If variances are unequal, compute

$$S_{NE} = \sqrt{(s_x^2/m) + (s_y^2/n)}$$

$$S_{NE} = 17.11$$

##### STEP 3: Calculate

$$t = (\text{mean } X - \text{mean } Y - 0)/S_{NE}$$

$$t = 4.85$$

Find degrees of freedom (f)

$$f = ((s_x^2/m + s_y^2/n)^2) / (((s_x^4/m^2)(m-1)) + (s_y^4/n^2)(n-1)))$$

$$f = 62.10$$

round down to nearest integer so f = 62

Use Table A-1 with 62 degrees of freedom to find the critical value  $t_{0.95}$

$$t_{0.95} = 1.671$$

Since calculated t of 4.85 is greater than  $t_{0.95}$  of 1.671, the null hypothesis is rejected which indicates that the populations are statistically different.